



ART &
CENGAGE
CREATIVE DEVELOPMENT
for **YOUNG CHILDREN**

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Seventh Edition

Art and Creative Development for Young Children, Seventh Edition

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SECTION 1

Creativity



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The authors believe so strongly in creativity that it is explored as a separate aspect of development in Chapter 4. Other writers might include creativity under cognition, because creativity depends on thinking. What is creativity? Creativity is an elusive term; although we all would agree that it is important, we may not all agree on what it is. Because creativity peaks during the early years, it seems fitting that Chapter 1, “Understanding Creativity,” should contain an extensive discussion on the nature of creativity.

Look at the preschoolers in the photograph. What are they doing? Is anything creative happening? The teacher has carefully planned the classroom block center around the theme of skyscrapers. This was prompted by an informal discussion in which a child shared her visit to a large city with “lots of tall, tall buildings that went way up high.” Other children picked up the

theme of “tall, tall buildings,” and began to plan their own city of skyscrapers and busy streets. The teacher encouraged their interest by reading aloud books about cities and skyscrapers and by providing photographs of cityscapes. Based on these sources of information and their own experiences, the children began to explore what a city might look like. Their play is rich with language and social interaction. It is also open-ended in that there is no one right way to build the city.

Chapter 2, “Creative Thinking,” identifies the components of creative thinking, also called divergent production, and activities that can be incorporated into small or large group times.

Besides art, how else can children express creativity? Chapter 3 identifies “Creative Experiences” in the areas of play, language, music, and movement that incorporate creative expression.

A LETTER TO FAMILIES

Dear Families,

For children, creativity is a way of interacting with people and things in their environment. When children pretend a block is a cell phone or a bandana is a cape, they are demonstrating creativity. As children mature and begin to take different roles in their play, their creativity is evident in the language and actions of their characters. Play, particularly dramatic play, is important in helping children develop creativity because it allows them to move beyond the concrete and into a world where imagination is in control.

Helping children develop creativity is a primary goal of our program. Because children need time, space, and materials to realize creative potential, our classroom and our curriculum are designed to support exploration and problem solving. Our day is organized into blocks of time during which children can explore without rushing to the next activity. Our classroom is organized in learning centers. Each learning center offers children the opportunity to interact with a topic, use related materials in different ways, and act on information.

The materials in our learning centers are open-ended, encouraging multiple uses. In the block center, unit blocks can be used to build an airport, food for a picnic, or even tools for measuring.

Time, space, and materials are important for supporting creativity at home, too. Your child needs opportunities to choose activities and to play alone and with friends. Your child also needs inside and outside places in which to play without worrying about too much mess or noise. As a parent, you can support your child's creativity by being nurturing and responsive but also by enforcing expectations for your child's behavior. Creativity flourishes in environments where children feel safe to explore and experiment.

Sincerely,

Your Child's Teacher

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Understanding Creativity



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Children can be creative with just about anything.

What do you see happening in this photograph? The teacher has planned an art activity that will allow the children to be creative.

The teacher provided different colors and weights of paper as well as scissors and tape. It is best when children use the colors they select for themselves and cut the shapes they want. Some children cut large shapes and taped them together. Other children cut small shapes and taped them to make a design on a large sheet of paper. Some used markers to add details or texture to their shapes. The child in the picture appears to be actively engaged and focused. How simple, yet how creative!

Objectives

After reading this chapter, you should be able to:

- Explain creativity as an attitude, a process, a product, a skill, a set of personality traits, and a set of environmental conditions.
- Compare and contrast creativity with conformity and convergent thinking.
- Discuss the relationship between creativity and intelligence.
- Discuss ways adults can facilitate children's creative expression.
- Explain the concept of multiple intelligences and the relationship of multiple intelligences to art.
- Identify characteristics of gifted and talented children.
- Discuss the implications of brain research.



Figure 1-1 Creative expression begins early in life.

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INTRODUCTION

With whom or what do you associate **creativity**? Do you think of architecture by Frank Lloyd Wright, a painting by Georgia O'Keeffe, or Henry Ford's Model T? These are classic examples of the creative works of some very creative individuals. You probably had other examples. Children were not included in this list. Were they included in yours? Let us explore creativity and see how it relates to young children.

BEGINNINGS OF CREATIVITY

Creative expression begins early in life (see Figure 1-1). Babies manipulate toys, explore space, discover their body parts, test hunches about their world, and even solve problems. For example, Lea wants a rattle she has accidentally kicked to the foot of her crib. Through trial-and-error she discovers that she can get the toy by tugging at the blanket underneath it.

There are many other examples of creativity in adults and young children. Merely identifying examples, however, does not help us understand the nature of creativity. What is creativity? How will we know if something or someone is creative? One way to attempt to understand creativity is by defining it.

CREATIVITY

There are many ways to define creativity. Perhaps this has added to the confusion and misunderstanding surrounding it. People have different definitions for the same term. How would you define creativity? Some accepted definitions are:

- the ability to see things in new ways
- boundary breaking and going beyond the information given
- thinking unconventionally
- making something unique
- combining unrelated things into something new

How does your definition compare with these? Torrance (1963a), a pioneer in creativity research, chose to define creativity as the process of sensing problems or gaps in information, forming ideas or hypotheses, and communicating the results. For example, two five-year-olds, Missy and Eric, want to build a school, but they have no blocks or pieces of wood. They decide to use shoe boxes, which are durable and stackable.

People who think creatively often have the ability to find connections between things that don't seem to be related. Their thinking may be described as **synergetic**, combining existing elements in new ways. **Serendipity**, making unexpected discoveries while

looking for something else, may also be a key component of creative thinking (Gelineau, 2004).

Gardner (1993a) offers a four-part definition of creativity. He sees the creative individual as a person who regularly solves problems, fashions products, or defines new questions in a way that is initially considered novel but that ultimately becomes accepted in a particular cultural setting. First, Gardner believes that a person can be creative in a particular developmental domain, rather than across all domains. This directly challenges the concept of an all-purpose creative trait that underlies tests of creativity. Second, Gardner believes that creative individuals regularly exhibit creativity as opposed to a once-in-a-lifetime burst of creativity. Third, he insists that creativity can involve fashioning products or devising new questions as well as solving problems. This greatly expands more traditional definitions that emphasize the making of products. Fourth, he believes that creative activities are only known as such when they have been accepted in a particular culture. Creativity depends on cultural judgment.

Although attempts to define creativity may provide a general feel for the concept, there are other ways to understand and explain creativity.

CREATIVITY: A PROCESS OR A PRODUCT?

In viewing young children's creative activities, early childhood teachers have long pondered the question: which is more important—the process or the product? The question remains the same whether the activity is play, music and movement, or art. Both sides of the **process vs. product** debate should be explored. Is the process, or the “how,” more important than the “what,” or the finished product that results?

Young children play for the sake of playing. They stack blocks for the sheer joy of stacking with no regard for what results. They make up their own words to songs and dance creatively just for the pleasure in doing so. For art, the process involves active, hands-on doing, exploring, trial-and-error experimenting, trying out, and manipulating of artistic tools and sensory-rich media. Processing is serious work and a means and end in itself. Processing honors the unexpected and provides opportunities for problem solving. For young children, processing is enjoyment and completion in and of itself. The focus and engagement in the present activity replaces a need to “make something.” The reward and pleasure are in the doing—whether it be singing, dancing, playing, or engaging in art. It is not necessary to make something that is recognizable to others or even rewarded with a compliment. With the processing approach, there will not be anything to display on the

wall or take home to post on the refrigerator. Processing does not need to culminate in a finished product to validate its importance. The value of the activity is in the doing. Edwards (2006) calls this process approach *experiential*, in that children engage in the process of art without knowing what the steps will be along the way or what will result. Process-oriented children do not know or care what the outcome will look like, or if indeed there even is an outcome or product.

The processing side of the debate views art as more verb than noun. The process of doing art could be called “arting.” According to Edwards (2006) and Isbell (2007), in the early years “arting,” is more important to the young child than creating a finished art product. Cherry and Nielsen (1999) state that the important goals of early childhood art are the involvement, the movement, and the discovery of self-accomplishment.

A focus on product rather than process argues the importance of making a final product and emphasizes that processing is secondary to that final product. Adult artists sell finished products, not the processes required to make them. According to Isbell (2007), some children become interested in the product as they develop skill in the use of art materials and techniques. For them, the art product is important, but this importance should be self-imposed and not demanded by adults. Often these children have an idea of what they want to make. This idea drives their artistic processing. They get excited when they execute their plans and something turns out the way they wanted. Often, they repeat the process to make more than one of the same artistic product. They enjoy others' recognition of their products as what they set out to make.

A concern about the product approach should be discussed. Children may be tempted to bypass creative processing for the sake of making a product, especially if they expect adult recognition, approval, and reward. For example, a child may hastily draw a flower to hear a teacher say, “Oh, how beautiful. I just love flowers.” This is not the nature of art. Art requires children and adults to express themselves and leave a mark that is personally meaningful.

Artistic processing and product making go hand in hand (see Figure 1–2). A product is created out of processing, but even adult artists engage in endless processing before achieving an acceptable finished product. If the finished product does not turn out, the artist goes back to more processing. Still, artistic processing should be at the heart of early childhood art activities. Value children's processing without expecting a finished product. In turn, accept the interest of some children, often older, to want to make finished products. Isbell (2007) proposes an interdependent progression in the process vs. product discussion. She believes the creative process begins during exploration and play with tools and materials. After many experiences, children move to the next step by focusing on a particular approach. Once



Figure 1-2 Creative processing at the easel.

an approach is chosen, children use this method in the production level. The last step involves evaluating, or even reworking. It is difficult to pinpoint when one step ends and another begins in the visual arts. The very young child often spends more time in the exploratory stage, whereas the more experienced child may spend more time at the production level. Each step, however, is important for the developing child.

ART EXPLAINING CREATIVITY

Although there is no single definition of creativity, there are different ways to explain it. Creativity can be explained as:

- an attitude.
- a process.
- a product.
- a skill.
- a set of personality traits.
- a set of environmental conditions.

Creativity: An Attitude, Not an Aptitude

For young children, it may be helpful to view creativity as a way of doing things. Creativity is a different way of viewing the world in which there are no right or wrong answers, only possibilities. Think of creativity as an attitude rather than an aptitude. Children demonstrate a creative attitude when they:

- try out new ideas and different ways of doing things.
- push boundaries and explore possibilities.
- manipulate and transform ideas and materials.
- take things apart and put them back together in different ways.
- physically play with objects.
- imagine, engage in fantasy, or just daydream.
- solve problems or try to figure things out.
- ask questions or challenge accepted ways of thinking or acting.

Creativity As a Skill

Although all children are creative, the potential to create remains dormant without practice. With practice, the potential to create becomes a reality. For example, the skill of playing tennis is quickly lost without practice. Good tennis players practice frequently. The skill of creativity also requires exercise to grow. Without practice, the abilities to write, make music, sing, dance, and paint would be lost. Creativity as a potential and a skill requires exercise. Sternberg and Lubart (1995) believe that creativity, like intelligence, is something that everyone possesses in some amount. Moreover, creativity is not a fixed attribute. One's level of creativity is not carved in stone at birth, and, like any talent, it is something almost anyone can develop to varying degrees. When a discussion of creativity arises, many adults are prone to state, "I'm just not creative." Everyone knows someone who is creative, but not all people believe themselves to be creative. In part, this relates to the old idea of a creative elite and a product explanation for creativity. Still, all people show some degree of creativity, whether in writing, sewing, cooking, making crafts, decorating, or even teaching! It is important to find a creative outlet and practice skills involved.

Still, why do some adults feel themselves uncreative when by contrast young children are considered highly creative? What has happened between early childhood and adulthood? Research suggests that the child reaches a peak of creative functioning during the early childhood years. Torrance (1965) plots the degree of creative functioning versus age. Creativity often peaks during the fourth year of life and is followed by a sharp drop upon entrance into elementary school. Only in a few adults do levels of creativity

ever re-approach what they were in early childhood. Perhaps the push for conformity and academics in elementary school explains this drop. Yet this drop is not inevitable. Environmental conditions and practice keep creativity alive.

Creativity As a Set of Personality Traits

The personality approach attempts to identify the personality profile of highly creative individuals. Researchers have identified highly creative individuals and have attempted to identify personality traits that these individuals share. Some of these include:

- an openness to the new and unexpected
- a tolerance for ambiguity
- a willingness to experiment and take risks
- impulsivity and curiosity
- a preference for complexity
- being highly intuitive and sensitive
- flexibility
- individualism, independence and introversion
- nonconformity
- playfulness and a sense of humor
- a strong sensory awareness (Gelineau, 2004)

This list is extensive, and not every highly creative individual will possess all the traits. Also, the list will vary depending on the researcher. Torrance (1962) identified the following seven indicators of creativity that may be useful in identifying and explaining the behavior of the highly creative young child.

Curiosity. The child's questioning is persistent and purposeful. Curiosity can be either verbal ("What is that?" "Why?") or nonverbal (manipulation and active exploration).

Flexibility. If one approach fails, the creative child will try a variety of different approaches.

Sensitivity to Problems. The child is quick to see gaps in information, exceptions to the rules, and contradictions in what is seen and heard.

Redefinition. The child sees hidden meaning in statements that others accept at face value. New uses are found for familiar objects. The child sees connections between things that appear unrelated to others.

Self-Feeling. The child has a feeling of self-importance and individuality. Self-direction permits the child to work alone.

Originality. The child has surprising, uncommon, interesting ideas.

Insight. The child spends much time toying with ideas and possibilities.

This set of global traits may provide assistance in identifying these individuals and understanding the nature of creativity.

Creativity As a Set of Environmental Conditions

If creativity is an inherent potential, there must be conditions or experiences that enhance or retard its development. Environmental conditions include people, places, objects, and experiences. Children do not create out of a vacuum. They need a source of inspiration or an experiential background from which to draw. For example, a child who has never visited an airport or been aboard a plane will have difficulty incorporating these concepts into play, movement, art, and other creative activities. By contrast, a child who has visited an airport and flown on a plane will be able to use them as pivots for creative expression. The greater one's background of experiences with people, places, and objects, the greater the range of possibilities to draw from in creative activity.

Home Environment

Obviously, the home environment is a critical factor in a child's creative development. Is there a home environment that optimizes creative development?

According to Healy (1994), parents who produce creative children share these characteristics:

- They show children how to be problem finders as well as problem solvers.
- They have full lives themselves and do not depend on their children to meet their emotional or achievement needs.
- They are not in awe of their child and do not defer to his or her demands or feel compelled to entertain him or her.
- They tolerate divergent ideas and mistakes made "in the service of learning."
- They provide discipline and structure to give children security to explore.
- They set realistic standards and encourage pride in achievement.
- They show active interest in the child's thoughts and creative efforts.
- They encourage a close, nurturing relationship as well as freedom of physical expression.

An Opportunity for Teacher Reflection

MS. BERRY'S KINDERGARTEN CLASS has been studying communities. The children are now creating a bulletin board display of their own community. Jermika is making a hospital. She has cut a large grey rectangle from construction paper and carefully drawn in windows and doors. Now she is trying to cut the outline of a red cross to be pasted over the door. Twice she reaches in frustration for

a new piece of red paper, as she decides the shape she has cut does not look like a cross. Suddenly, as she stares at the paper scraps around her, an idea occurs! "Look!" Jermika says excitedly to Ms. Berry. "If I put two rectangles across like this I can make a cross!" *How should Ms. Berry respond to Jermika? Should she reinforce Jermika's problem-solving skills or celebrate Jermika's creativity?*

- They give children early responsibility for making choices and taking appropriate responsibility for their own decisions.
- They permit children to have solitude and develop imaginative thinking by daydreaming.
- They show children how to be curious and observant.
- They allow honest expression of emotions.
- They encourage children to feel intuitively as well as think logically.
- They do not put pressure on school for "competency" that excludes intellectual creativity.
- They expose children to a broad range of artistic and intellectual pursuits.

Because sensory awareness is an important component of creativity, Gelineau (2004) encourages parents and teachers to provide experiences to help children become better observers, listeners, tasters, smellers, and feelers to facilitate the development of creativity.

Nurturing Creativity at Home

Children will be creative on their own, but there are factors that cultivate creativity. Parenting that is highly nurturing of young children, while still communicating firm but reasonable limits for behavior, fosters creative thinking and expression in children (Baumrind, 1966). Families of creative children are those that tend to allow their children to make mistakes, understanding that flexibility and freedom are essential if the children are to learn to correct and overcome mistakes (Kemple and Nissenberg, 2000). Michel and Dudek (1991) found that mothers of highly creative children are likely to be in professional careers. They are less overprotective of their children and, because they tend to have their own professional aspirations, less enmeshed in their children's lives. Their children are encouraged to be independent, to explore, and to experiment. Family environments

that nurture creative children are those that involve children in family decision making; adults take the time to explain to children why decisions are made and why rules should be followed (Wright and Wright, 1986). Gardner and Moran (1990) identify adaptability as a family trait that encourages creativity. During periods of stress or change, families may model for their children flexibility, originality, and the potential for growth. This model provides a powerful influence on the creative thinking and expression that children will demonstrate throughout their lives. And, finally, Kemple and Nissenberg (2000) identify three components of the creative family environment: respect for the child, an enriched learning environment, and stimulation of the child's independence.

OBSTACLES TO CREATIVITY

Just as a stimulating environment and family factors can enhance creativity, negative conditions can restrict it. Potential obstacles to creativity can come from:

- home.
- school.
- gender roles.
- society, culture, and tradition.

Home

Families often have expectations which creative children are challenged to meet. Highly creative children often question authority, limits, adult logic, and explanations. These children act and behave differently.

Families may view these behaviors as misbehavior. They may perceive and treat their creative child as odd, immature, abnormal, or naughty. Families may need to be informed and educated about the nature of creativity

Profile of a Gifted/Talented/Highly Creative Child

THINK OF A CHILD with whom you have worked and who you would call creative. What words would you use to describe this child? While the following traits describe creative children, no one child will perfectly match this tentative profile. Creative children tend to be:

- original, imaginative, spontaneous, resourceful, and uninhibited.
- sensitive to sensory stimuli and have heightened awareness. They are open to new ideas, see things afresh, and are intuitive.
- curious, alert, impulsive, willing to take risks, adventurous, and into everything.
- independent in thinking and social behavior. They can appear aloof and may prefer older peers and adults to friends their own age.
- developmentally advanced, precocious, fast learners. They have good memories, extensive vocabularies, and are interested in books, often learning to read by themselves at an early age.
- perfectionists with a good sense of humor; they ask “why” questions.
- persistent, with a long attention span; they can stick with a plan or idea.
- nonconforming and unconventional; they question or challenge the status quo.
- inventive and innovative, and good at solving problems.
- not overly concerned with being neat or prompt; they may be easily bored with routine and mundane tasks.

through classroom observation, readings, and informal sessions in which they discuss creativity and engage in creative processing themselves. Teachers who value and support creativity in the classroom find that young children are most successful when their families collaborate with the teacher to support creativity at home (Kemple and Nissenberg, 2000).

School

Too often the creative child must operate in a school situation based entirely on conformity and **convergent thinking**. The child is taught that black is the color of night when he or she has experienced it as purple-blue or licorice. With the current emphasis on academics in early childhood education, little time may be spent on creative activities. It is also possible that some children feel confined in noncreative classrooms and “shut down” or rebel to protect their creative integrity. It is important for teachers to understand, value, and encourage creativity by providing curricular activities that foster it.

Gender Roles

Gender roles limit boys and girls to certain behaviors. Creative functioning, however, transcends gender role

barriers. Forcing children to conform to stereotypical gender roles denies them their optimal development as individuals. We do children a disservice when we expect boys to be active, independent, and rugged, and girls to be passive, dependent, and gentle. If gender roles were to dictate, boys would be denied access to quieter expressive activities, and girls would be denied access to reactive manipulative experiences. Either way children lose, because both types of experience are vital to creative processing.

Society, Culture, and Tradition

Society, culture, and tradition are distinct concepts, but each dictates a certain set of behaviors, values, and attitudes that are transmitted to children in the form of expectations. Unfortunately, creative children may operate with a different agenda. Problems arise for highly creative children in a milieu where adults have all the answers and children are expected to fit a rigid behavioral mold or pattern. Often, the rationale includes “That’s the way it’s done in our family” or “If it was good enough for me, it’s good enough for you.” It is important to respect, reinforce, and uphold the expectations of society, tradition, and one’s culture without sacrificing individuality in the process.

CHILDREN NEED ADULTS WHO FACILITATE CREATIVE EXPRESSION

The following strategies send messages to children that their creative expression is valued.

1. Celebrate Creativity

Help children identify with creative heroes. For example, bring in telescopes on Galileo's birthday. Read books about creative individuals. Discuss their accomplishments. Ask questions to help children think creatively about these accomplishments: "What if we didn't have lights?" Turn off the lights and light candles. Discuss the importance of the lightbulb. Point out creativity when you see it: "A Velcro lunch box, now that's a creative idea." It's important for children to understand that creativity isn't limited to those who show special talents; creativity can flourish wherever it is supported and appreciated (Gelineau, 2004).

2. Value Children's Creativity

View creative development as a vital component of the whole child. Allow children the freedom to think and act differently. Accept their attempts at creative processing that do not result in finished products. Discuss the importance of creativity with children, parents, staff, and administrators. Speak up against budget cuts for the arts or attempts to replace play-based learning with academic instruction, and recess with structured physical education.

3. Be a Creative Partner

Empower children by making yourself available to enter their creative worlds. Be a play partner who follows the lead of children rather than imposing your own plot, sequence, and script (see Figure 1–3).



Figure 1–3 Follow the children's lead in creative activities.

4. Provide Time and Space for Creative Expression

Children need plenty of space to lay out materials and work alone or together to give form to ideas. Time and space should be fluid and flexible. Tables, chairs, and movable units may need to be rearranged for creative activities. Creativity may entail noise, excitement, movement, and clutter. An excessive concern for constant cleanliness or neatness inhibits creative "messing about."

5. Provide Toys and Materials Conducive to Creativity

Let children creatively use and transform toys and materials. Accept the fact that small blocks from one center will be transported to another to be used for play. Clean smocks from the art center may find their way to the dress-up area to be used as capes or aprons. In choosing and providing toys and materials, **open-ended** items are more conducive to creative expression than **closed-ended** ones. Open-ended materials are loosely structured and do not require one right or correct use. They have multiple rather than single outcomes. For example, water, sand, blocks, play dough, and building pieces are open-ended because they empower children to use them in many different ways. By contrast, a puzzle is an example of a closed-ended material in that it is designed with a **single outcome** or correct use: to fit the pieces together in a predetermined pattern. Although one can use puzzle pieces creatively—for example, as food or money—that is not their intended use. A comparison and contrast of open- and closed-ended toys and materials can be found in the book's Website.

Toys and play materials can also be categorized as simple and complex. Simple toys and materials foster a degree of creative expression, whereas complex toys and materials extend the potential for creativity. Toys and play materials that offer some degree of creativity can be made complex. For example, blocks alone are considered simple in that they can be creatively combined. Block play can be made more complex by adding props, including small containers, vehicles, and animals. The same is true for water and sand play. Adding kitchen containers to water and sand play expands the creative possibilities.

6. Provide a Psychological Climate Conducive to Creativity

Children flourish in a psychologically safe setting that respects, trusts, and empowers them to act autonomously without fear of criticism, rejection, failure, or pressure to conform. Children need to make choices

and decisions and to do things on their own in their own ways. By providing an array of materials and activities from which to choose, the environment can be set up to foster autonomy. An overly structured day revolving around teacher-directed activities impairs children's creative development. Children quickly learn to override their drive for creativity and autonomy and instead become dependent on others for answers or solutions. If all the children in the classroom are made to feel that their contributions are worthwhile, then the classroom climate will support creative thinking (Gelineau, 2004).

7. Weave Creativity and Creative Expression throughout Your Curriculum

Creativity should not be approached as an isolated skill to be scheduled into an already overcrowded day. Children cannot magically turn on their creativity to fill a half-hour time slot on alternating Fridays. The curricular areas (mathematics, social studies, science, language arts) provide ample opportunities for children to use both sides of the brain. For example, children may need to learn about the food groups and making healthy choices, but they can be creative in planning menus and making posters for healthy eating. A resourceful teacher will find ways to integrate creativity into the curriculum.

COMPARING AND CONTRASTING CREATIVITY

Another way of attempting to understand and explain creativity is through comparison and contrast. Comparing and contrasting a concept with others that are either similar or different is one way of understanding that concept.

Creativity vs. Conformity and Convergent Thinking

Convergent thinking (noncreative) and behavior based on conformity are built into our educational system and reflected in school goals. There are facts and bodies of knowledge that we want all children to possess. For example, children need to know that up is the opposite of down, that STOP on the traffic sign does not mean to run, and that there are five pennies in a nickel. This type of knowledge involves memory and convergent thinking because all children are expected to produce one right answer. Beyond this, conformity in school often entails behaving in a certain way, with an emphasis on sitting still, speaking only when spoken to, obeying, not

challenging authority, not questioning, complying, and doing what is generally expected. Obviously, conformity is important if groups of people are to get along. When it is carried to extremes, however, an emphasis on conformity and convergent thinking can kill the creative spirit.

Creativity vs. Intelligence

Creativity can also be compared and contrasted with intelligence. It has sometimes been erroneously assumed that a high IQ is needed to be creative. Research, however, indicates that high scores on tests of creativity are not correlated with high scores on IQ tests. A high IQ says something about intelligence, but it cannot guarantee high creativity. This is easy to understand because answering items on an IQ test requires remembering bits and pieces of factual information and involves convergent or noncreative thinking. Thus, it is possible for a child with a high IQ to be quite uncreative compared with other children of average intelligence. It does seem, however, that some basic level of intellectual functioning and an average IQ near 100 is required for creativity. For example, a child must have some basic knowledge of the properties of a shoe box and transportation before he or she can creatively transform an empty shoe box into a moving van. Therefore, using tests of intelligence to screen highly creative children must be done judiciously. Such tests are merely one of many tools, including teacher observation and parental reports, that can be used. According to Torrance (1962), if we were to identify children as gifted solely on the basis of IQ tests, we would eliminate approximately 70 percent of the most creative. In summary, although some amount of intelligence is a prerequisite for creativity, a high IQ does not guarantee high creativity. In turn, average intelligence does not necessarily mean mediocre creative ability. Intelligence is merely one factor influencing creativity.

Because children's thinking is a concern of early childhood educators, it may be interesting to explore the relationship between intelligence and creativity. It appears that profiles for the highly intelligent child and the highly creative child do not match. Nor does the profile for the child of low intelligence match the profile for the child of low creativity. Wallach and Kogan (1965) studied the interplay of intelligence and creativity in school-age children. Four patterns emerged:

1. High intelligence and high creativity—These children were flexible and could be serious at one time and playful at another. They could easily adapt to different learning environments. They were very self-confident and displayed high attention and concentration for school tasks. They also engaged in attention-getting and disruptive behavior.

2. Low intelligence and high creativity—These children were frustrated and had a difficult time in traditional schools. This probably tended to make them feel unworthy and inadequate. They were cautious, lacked self-confidence, and engaged in disruptive behavior.
3. Low intelligence and low creativity—These children did not appear to understand what school was all about. They spent their time in intense physical activity or passive retreat.
4. High intelligence and low creativity—These children were devoted to achieving in school. They had high attention spans and high self-confidence. They were unlikely to act up in school and were well liked by their teachers.

Teachers were later asked to identify their ideal pupil from these four profiles. Which one would you select? Teachers overwhelmingly selected children characterized as highly intelligent but low on creativity. The behavior problems that could arise from creativity (or its stifling), as in the first pattern, appear to outweigh any advantages. It is understandable that the teachers favored high intelligence over high creativity. Highly intelligent children follow directions, work independently, listen, pay attention, obey, and conform. On the other hand, the highly creative child often causes problems requiring individual attention. According to the general personality profile, highly creative children tend to be daydreamers, independent, nonconforming, impulsive, outspoken, challenging, and questioning individuals who test limits.

Gardner (2006) cautions against the use of creativity tests to measure and/or predict creativity because their validity has not been adequately established. A valid test is one that contains items that reflect the nature of the concept or skills being tested. So creativity tests contain items that are not directly related to the construct being tested, creativity. Instead of using tests of creativity, Gardner favors assessing creativity in real life (as opposed to artificial testing situations) where children are engaged in creative pursuits, and their creative processes and products are documented. This line of thinking provides the rationale for using portfolio assessment as discussed in Chapter 16.

Creativity may or may not be a characteristic of children identified as **gifted and talented**. Children who are considered gifted and/or talented show high performance in one or more of the following areas: general intellectual ability, academic aptitude, creative thinking or production, leadership ability, talent in visual and performing arts, and physical ability, such as athletics. According to Gordon and Browne (2008), however, educators are increasingly concerned about the under-representation, in this category of gifted and talented, of children from

low-income populations, children who are ethnically and culturally in the minority, children who have disabilities, and children who are bilingual. Characterizing gifted and talented children can be challenging because their development across domains may be uneven. Generally, young gifted and talented children may:

- be curious and inquisitive.
- have a good sense of humor.
- be unusually aware of their surroundings.
- be able to think quickly and at higher, abstract levels.
- have an extensive and mature vocabulary.
- ask thought-provoking questions.
- have a long attention span.
- be able to sustain concentration.
- have a developmental lag between their physical and intellectual domains, with fine motor skills lagging behind their cognitive skills.
- have a developmental lag between their social and intellectual domains that may lead them to be intolerant of less-advanced peers.

Gifted and talented young children are most often found in mainstream early childhood classrooms (Gordon and Browne, 2008). Because of their unique needs and characteristics, they present special challenges and opportunities for their teachers. Programs and approaches that provide challenges, nurture diversity and divergent thinking, and enable children to learn at their own pace and in multiple ways provide a good match for gifted and talented children. Enrichment activities to supplement their mastery of core curriculum will challenge their gifts and talents. Mixed-age grouping is recommended, because a child who exhibits one or more gifts may not excel socially. Open-ended art activities (see Chapter 10) and the art center approach (see Chapter 13) provide creative challenges for gifted and talented children.

Multiple Intelligences. According to Gardner (2006), there are many ways of demonstrating intelligence. Gardner defines intelligence as the capacity to solve problems or make things that are valued by one's culture. Gardner believes there are eight criteria for identifying intelligence. Wilkens (1996) explains these as:

1. Each of the intelligences can potentially be isolated by brain damage or degenerative disease. A true intelligence will have its function identified in a specific location in the human brain. This means it is possible to destroy the ability in one sector while leaving the others intact.
2. Each of the intelligences exists in exceptional people, including idiot savants and prodigies. Mozart, for example, who was able to perform at the piano at the age of four, was a musical prodigy. Difficulty

in interpersonal or daily living skills may also be involved. There is no guarantee of competence across all the intelligences.

3. Each of the intelligences has a process of development during childhood and has a peak end-state performance. For example, verbal-linguistic intelligence presents itself in early childhood while logical-mathematical peaks in adolescence and early adulthood.
4. Each of the intelligences is evident in species other than human beings. For example, birds make music and rhythm while whales use a linguistic intelligence to communicate with each other.
5. Each of the intelligences has been tested using various measures not necessarily associated with intelligence. Although IQ tests may be used, they are by no means the only measure.
6. Each of the intelligences can work without the others being present.
7. Each of the intelligences has a set of identifiable operations. Gardner compares this to a computer needing a set of operations in order to function.
8. Each of the intelligences can be symbolized or has its own unique symbol or set of symbols. For example, interpersonal intelligence uses gestures and facial expressions.

The multiple intelligences, related “smarts,” and corresponding strengths and interests are depicted in Table 1–1.

Gardner asserts that we all have some of each intelligence as well as particular strengths. Everyone can be characterized as smart in one or more of the intelligences.

How do art skills and process match up with the eight different intelligences? How are multiple intelligences strengthened through art? Refer to Table 1–2.

Gardner has provided a wider view of intelligence. What are the implications? The theory of multiple intelligences offers implications for both instruction and assessment to include the following:

1. We must broaden our views of intelligence to incorporate multiple examples. All intelligences are important, and children come to us with different sets of developed intelligences. Not all children are verbally or mathematically inclined. This does not mean they are not smart. They are just smart in other ways. Traditionally, schooling has focused on verbal-linguistic and logical-mathematical intelligences. Children who excelled in language arts, math, and logical thinking flourished. They were “smart” in the areas the school valued. Unfortunately, children who did not excel in these areas had no outlets to express their different intelligences.
2. The different ways to be smart must be respected. It is crucial to plan experiences that include the different intelligences. Gardner (1999) refers to this as “multiple key entry points” to content. Not every

Table 1-1 Gardner's Multiple Intelligences (1993b)

INTELLIGENCE	“SMART”	STRENGTHS AND INTERESTS
bodily-kinesthetic	body	sports, movement, dance, acting, dramatics, large motor and playground activities
musical-rhythmic	music	singing, dancing, playing a musical instrument, listening to music
interpersonal	people	making friends, socializing, cooperative projects, being a leader, resolving peer conflicts
visual-spatial	pictures	art, looking at pictures, daydreaming, puzzles, maps, charts
verbal-linguistic	words	speaking, reading, writing, listening, telling stories, thinking in words, discussions, memorizing, word puzzles, word games
logical-mathematical	math	math, reasoning, logical and abstract thinking, problem solving, patterns, working with numbers, computers
intrapersonal	self	understands self, knows strengths and accepts limits, works alone, pursues own interests, reflective, self-paced learner
naturalist	nature	recognizes plants, minerals, animals, clouds, rocks, flora, fauna, other natural phenomena

activity involves all the intelligences, but the more intelligences involved, the greater the chance that all children will excel.

3. Using an integrated approach to curriculum development will increase the likelihood that many intelligences will be involved in a course of study.
4. Target the development of specific intelligences through activity centers by setting up stations throughout the classroom with resources related to each intelligence. For instance, a verbal-linguistic center could include books, a word processor, and writing tools.
5. Provide students with choices of activities that capitalize on their learning styles and brain preferences. Dominant intelligences can be reinforced, whereas weaker intelligences are strengthened. Students have opportunities to improve their weaknesses by tapping their strengths.

Table 1-2 Relationship of Multiple Intelligences to Children's Art

MULTIPLE INTELLIGENCES	RELATIONSHIP TO ART
bodily-kinesthetic	<ul style="list-style-type: none"> manipulation of art tools enhances use of large muscles, sensory-motor integration, fine motor skills, and eye-hand coordination involves bodily and kinesthetic movements and multisensory stimulation different media require different types of processing, involving different physical movements and skills
musical-rhythmic	<ul style="list-style-type: none"> children can make musical instruments or sound makers art can be produced in response to music background music can trigger artistic processing
interpersonal	<ul style="list-style-type: none"> children talk about and share their art with others children work together and practice social skills at the art center children use peers as resources while doing art children elect to engage in group art projects as part of the project approach, art involves collaboration children comply with rules and limits of the art center
visual-spatial	<ul style="list-style-type: none"> art involves symbolic representation provide materials for two- and three-dimensional processing use art books, art posters, and illustrated children's books that are visually aesthetic and stimulating display children's artwork at their eye level
verbal-linguistic	<ul style="list-style-type: none"> encourage children to talk about their art encourage art sharing as part of show-and-tell read art books to children engage in art dialogue with children take art dictation, encouraging children to tell and write their own art-related words and stories teach art vocabulary, including the artistic elements label art materials and supplies conduct art critique using artistic elements for children to discuss works of art
logical-mathematical	<ul style="list-style-type: none"> involves patterning, color mixing, quantifying, and problem solving set up an organized art center in which similar materials are grouped together or classified children make choices, decisions, and carry out plans
intrapersonal	<ul style="list-style-type: none"> children work alone and reflect on their processing and results personal emotions, thoughts, and ideas are expressed provide multicultural art supplies plan art activities focusing on the child's sense of self; art replies to "Who am I?"
naturalist	<ul style="list-style-type: none"> take nature walks to collect nature specimens for art provide natural materials for painting, printing, collage, sculpture, and weaving children use personally meaningful symbols to represent nature and their surrounding natural environment

6. Because all children do not learn in the same ways, they cannot be assessed in the same ways. Consider creating an intelligence profile for each student. A good approach to assessment is to allow students to explain or document what they

know or have learned in their own ways using their different intelligences. Chapter 16 will offer additional guidelines for appropriate assessment of young children. After observing your children in a variety of activities, you, as the teacher, will

soon have a good picture of each child's strengths and weaknesses. Sharing this information with the children, however, may provide them with a rationale for avoiding activities that do not come naturally. Be careful not to label a child as having a "visual spatial intelligence" or being a "naturalistic learner." Instead, encourage children to use their strengths to support their learning in all areas.

Brain Research. Early childhood educators have long believed that rich, early experiences and quality time with a caring and loving family are critical to a child's development. These beliefs have been supported by the discoveries neuroscientists have made about brain growth in the early years. **Brain research** is a line of study documenting the impact of early experiences on the architecture of the brain and on the nature and extent of adult capacities. During the early years, the brain has the greatest capacity for change. How the brain develops hinges on a complex interplay between a young child's genes (heredity) and life experiences (environment). The developing brain is malleable, flexible, and plastic and has the ability to explode with new synapses or connections. The brain's neural plasticity allows it to constantly change its structure and function in response to external experiences.

The environment affects not only the number of brain cells and number of connections among them, but also the way those connections are wired. On the positive side, brain growth can be positively stimulated. The brain develops in an integrated fashion over time so an enriched environment addresses multiple aspects of development simultaneously. It thrives on taking in unexpected information, as long as the unpredictability isn't accompanied by insecurity or perceived threat (Heath and Wolf, 2004). On the negative side, however, neglect or abuse can impede the child's developing brain functions. If a child receives little stimulation early on, synapses will not sprout, and the brain will make few connections. The harmful impact of stress on early brain development damages overall growth and development, placing the child at much greater risk of developing a wide range of cognitive, behavioral, and physical problems. In some cases, these effects may be irreversible. While traumatic events may significantly influence the behavior of adults, they actually change the *organizational framework* for a young child's brain. Life experiences are now believed to control both how the infant's brain is architecturally structured and how intricate brain circuitry is wired. Early experiences have a decisive impact on the architecture of the brain and on the

nature and extent of adult capacities. Early experiences directly affect the way the brain is wired.

In reviewing the literature on the development of the brain, Shore (1997) as well as Richey and Wheeler (2000) found that experiences and opportunities afforded to children during the early childhood years are critical to the development of neural pathways that govern cognitive, motor, and socio-emotional learning and development. Early in a child's life, the brain has many more cells (neurons) than the child will need (Allen and Marotz, 2010). Connections among neurons are formed as children explore their environment, play, and develop attachments to others. Connectivity is a crucial feature of brain development because the neural pathways formed during the early years carry signals and allow one to process information throughout life. Timing is also crucial. Even though learning continues throughout life, there are critical periods during which the brain is particularly efficient at creating neural pathways that facilitate specific kinds of learning. Experiences children have during these sensitive periods stabilize neural pathways and lay the foundation for optimal development. For example, the window of opportunity for vision and language development appears quite early and is lost by about age 10. If a child is born deaf, the neural pathways remain silent and atrophy. This is not to say that an adult cannot learn a second language. However, it is much more difficult to learn a foreign language after age 10 or so, and the language will probably be spoken with an accent. Lack of experiences during critical periods will result in underdeveloped neural pathways. Thus, the architecture of the brain reflects the presence or absence of a wide range of physical, cognitive, and socio-emotional experiences during the early years.

Play is a critical element in early childhood because it provides the context for experiences that are vital to the development of neural pathways. Children must have time to practice and master the skills they have learned before moving on to learning new ones, and learning must take place in a meaningful context and in an environment of love and support. A developing brain does not know the difference between an inexpensive set of plastic measuring cups that nest and an expensive toy with an exaggerated claim by the manufacturer. The key is for adults to be responsive to children. According to Galinsky (1997), being responsive is not about using flash cards or buying expensive toys. It is not one-way stimulation from adult to child like filling an empty vessel with water. Being responsive is engaging in subtle give-and-take in which the child leads and the adult follows.

And what about art? In the past, there was a tendency to view art exclusively as an affective process. We

now know that art is both a cognitive and an affective process. Children think and feel when engaged in art. Because making art requires that children think and feel about their experiences or ideas and find symbols to express them, art is a highly symbolic and meaning-making activity. We also know that the brain functions in very different ways during various phases of the creative process. The brain's plasticity influences creative outcomes (Heath and Wolf, 2004).

All Children Are Creative but Not All Are Labeled Gifted or Talented

All children have the potential to create, but some are more creative than others. What accounts for this difference? First, some children have had their creativity nurtured; others have not. Ways of nurturing children's creative potential are discussed in this chapter as well as in Chapters 2 and 3. Second, intelligence influences creative expression. Children of high intelligence are labeled gifted. Children with a creative aptitude for art, music, drama, or dance are labeled talented. In some schools children who are considered gifted and/or talented receive enrichment to challenge them and to supplement their regular learning activities.

CREATIVITY AND CHILD DEVELOPMENT

What is the relationship between creativity and a child's development? Are there any developmental benefits to a child's creative functioning? Whatever the form that creativity may take, the child develops large and small muscle skills through manipulating the appropriate tools or apparatus. Musical instruments are played, paint is mixed and spread, clay is pounded, and the body moves to music and song. Creative expression enhances physical development. Socially, it can also help children interact with others. At times creativity involves solitary thinking or grappling with problems. At other times social skills, including sharing, taking turns, and entertaining other points of view, are practiced. Creative expression fosters emotional development and positive mental health by validating the uniqueness of the individual.

Juan, age three, made a clay dinosaur with two legs and an oversized head. He was proud of his accomplishment, and it did not matter if dinosaurs had four legs. Juan felt good about himself and the dinosaur he had created. Philosopher Mihaly Csikszentmihalyi (1997) believes there is a strong connection between creativity and happiness based on research showing that being creative stimulates the brain's pleasure centers. Creativity



Figure 1-4 The eight-year-old artist of this drawing imagined and created a doctor's office as he interpreted a magazine photo.

fosters mental or cognitive development. It involves many higher-level thinking skills, including observation, problem solving, discovery, analysis, hypothesizing, predicting, testing, and communicating, among others (see Figure 1-4). In the school setting, creativity can enhance and reinforce learning in the traditional curricular areas of math, science, social studies, listening, speaking, pre-reading, pre-writing, and other expressive arts.

SUMMARY

The mystery surrounding creativity was addressed in this chapter. Creativity can be viewed as making a unique product. Children, however, may make or create things that are new or original only to them. These are considered creative on the basis of their creative processes, which may or may not result in a finished product. Creativity was also viewed as a skill requiring practice. Environmental conditions can either foster or hinder creativity, and an optimal home environment was described. Creativity was also compared and contrasted with conformity, convergent thinking, and intelligence. It was found that a high IQ did not guarantee a high degree of creativity.

Expect creative children to wonder, question, and challenge traditional ways of doing things. They may enjoy doing their own thing rather than "playing the game of school." Creative traits cluster around a personality that goes beyond the status quo and thrives on daring to be different and nonconformist.

Key Terms

brain research, 16
closed-ended, 11
convergent thinking
(noncreative), 10

creativity, 5
gifted and
talented, 13
open-ended, 11

process vs.
product, 6
serendipity, 5
synergetic, 5



Suggested Activities

1. Identify or develop at least one thing you do creatively. Practice and continue to refine it. Document your own creative development, including setbacks, frustrations, and successes with a journal.
2. Make a resource list of local businesses and contacts that are good sources of free (or inexpensive) recyclable materials. Include the name, address, e-mail address and contact person for each resource.
3. Spend one morning observing a teacher's use of time, space, and curriculum, as well as his or her teaching behaviors. List specific recommendations for how each could be modified to further enhance creativity.
4. With your peers, brainstorm a list of creative individuals. Identify their names and claims to creativity. Use gender to examine your list. Do you have an equal number of female and male creative individuals? Keep brainstorming until you have five of each.
5. Examine Healy's (1994) portrayal of what families can do to raise creative children (see the section "Home Environment," earlier in the chapter). Do the characteristics in the list match your own upbringing? Discuss your answer.
6. Consider carefully the letter to families included at the beginning of this section. How will you define creativity for the families of children in your classroom? Write your definition, and share it with others who have done the same. Note the similarities and differences. Discuss the elements of creativity that are most important for families to understand and the roles teachers play in building this understanding.
7. Working with a partner, review the eight intelligences outlined in Gardner's theory of multiple intelligences. Identify those in which you feel you have strengths and those in which you do not. Discuss which intelligences might be most important for a teacher of young children.

Review

1. What is the relationship among creativity, convergent thinking, and intelligence?
2. Name three different ways of understanding creativity.
3. Pretend that you are speaking to your parent group on creativity. The parents ask you for important things that they can do at home to enhance their children's creativity. Specifically, what three suggestions do you share?
4. List and discuss any four obstacles to creativity.
5. Are young children more process oriented or product oriented in their creative expression? Explain your position.
6. List the characteristics of families that nurture creativity in young children.
7. Is intelligence a single concept confined to thinking? Include a discussion of multiple intelligences to justify your position.
8. Creativity may be one characteristic of children who are gifted and talented. What other characteristics may gifted and talented children exhibit? Discuss the strategies you could use in your classroom to meet the needs of gifted and talented children. Explain why these strategies would be successful.
9. List and explain the eight multiple intelligences. Explain what the research on brain development means for early development. What are two key implications? Identify and number each.



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