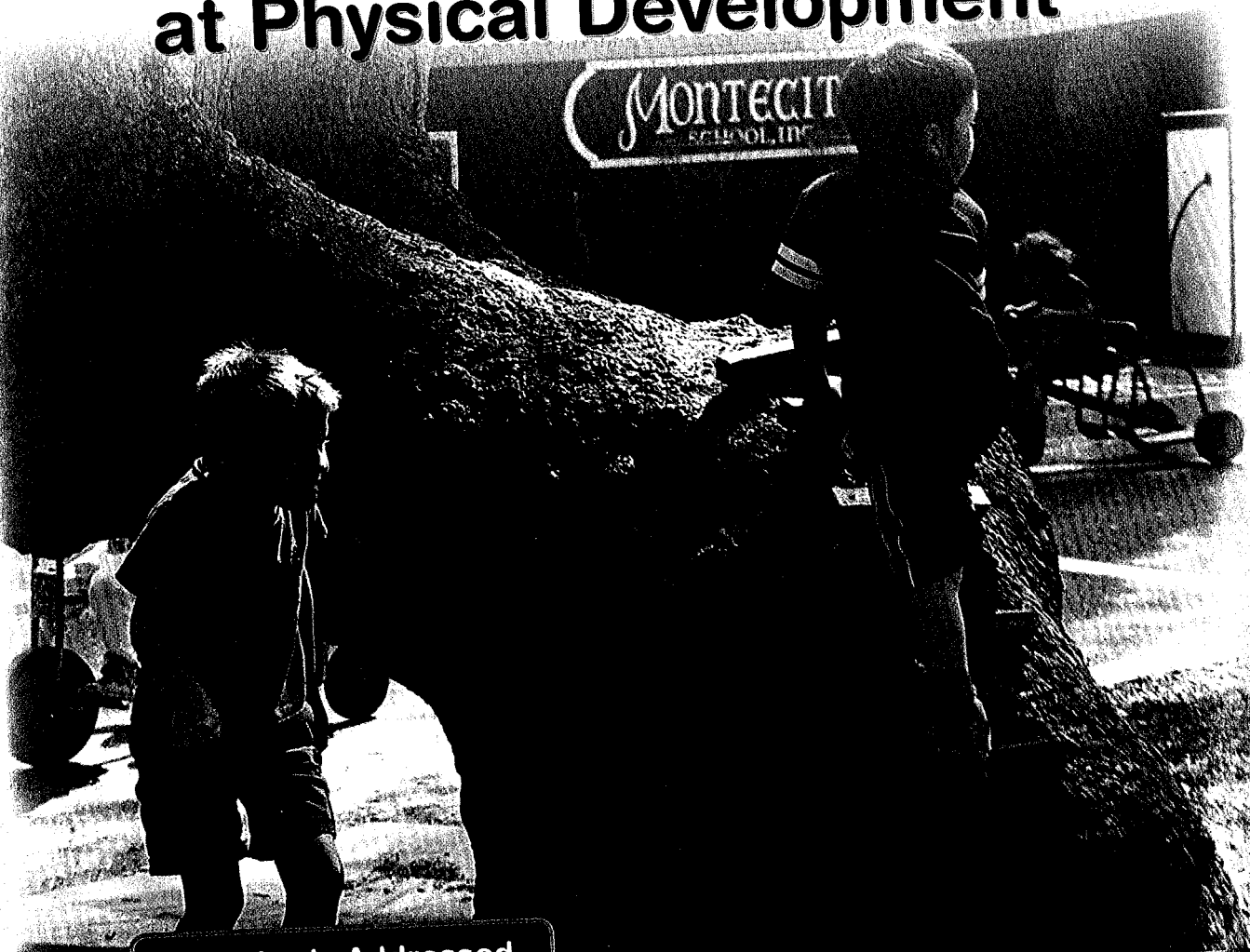


Chapter 4

Using Checklists to Look at Physical Development



Standards Addressed in This Chapter

naeyc

NAEYC Standards for Early Childhood Profession Preparation (2011)

1a Knowing and understanding young children's characteristics and needs, from birth through age eight.

3.a-d Observing, documenting, and assessing to support young children and families.

6b Becoming a professional—Knowing about and upholding ethical standards.

NAEYC Early Childhood PROGRAM STANDARDS (2014)

2.C.04 Children have varied opportunities and are provided equipment to engage in large motor experiences that:

(a) stimulate a variety of skills, (b) enhance sensory-motor integration, (c) develop controlled movement (balance, strength, coordination).

9.B.01 Outdoor play areas, designed with equipment that is age and developmentally appropriate and that is located in clearly defined spaces with semiprivate areas where children can play alone or with a friend.

DAP

NAEYC Developmentally Appropriate Practice Guidelines (2009)

1D Practitioners design and maintain the physical environment to protect the health and safety of the learning community members.

● Learning Objectives ●

After reading this chapter, you should be able to:

- 4-1 Compare the advantages and limitations of developmental checklists as an observation tool.
- 4-2 Describe viewing a child from one's own Frame of Reference.
- 4-3 Differentiate between growth and development.
- 4-4 Discuss the interaction between physical development and other areas of development.
- 4-5 Give examples of indoor and outdoor environments that stimulate physical development through play.
- 4-6 Determine modifications of the environment to include all children in physical activity.

4-1 Using the Checklist

A **Checklist** is a predetermined list of criteria against which the recorder answers yes or no. In Checklist ratings, the recorder reads the criterion, decides on an answer, and makes a checkmark as an indication of an affirmative answer. Some of the criteria in the Exercise above are observable, whereas others are judgmental or inferential. Mark those with a "J." The third and fifth items are not observable.

Checklists are described as a **closed method** because no raw data or evidence is recorded, just the judgment (inference) of the recorder about the criterion. Checklists are highly selective, only giving the recorder the opportunity to record a decision concerning the criterion. That does not mean it is not useful or accurate, but the reader has no raw data or details to check the recorder's decision. This is a characteristic of the Checklist recording method.

A valid child development Checklist records the attainment of accepted developmental milestones in the areas of knowledge, behavior, and skills. For a Checklist to be an effective tool, the observer must be very familiar with the criteria to assess the child's development accurately. Therefore, the criteria should be clearly observable, leaving little room for subjective judgments. If not, two raters may see the same child performing a skill, but rate the skill differently. Checklists' criteria should be appropriate to the population they are assessing and the developmental sequence of the criteria. Many programs and teachers design their own Checklists to fit the goals and objectives of the program and the population the program serves, but these may be less accurate than Checklists designed by child development experts.

When the criteria are arranged in the order in which normal development occurs, a Checklist can be a forecaster or predictor of the skills or behaviors that will appear next. In this way, a Checklist helps plan intentional teaching in planning experiences to practice the next stage. For example, it is easy to see the following criteria in developmental sequence:

- ☒ Child sits unassisted 2/12
- ☒ Child creeps 6/26
- ☐ Child pulls to a standing position
- ☐ Child walks holding onto furniture
- ☐ Child walks alone

When the criteria are arranged in developmental sequence and the observer has checked that the child sits unassisted and creeps, the next stage is pulling to a standing position. The teacher can then provide an environment that stimulates pulling up to a standing position, such as stable furniture and interesting things to look at above the

EXERCISE

Complete the following checklist.

- ☐ I read Chapters 1 through 3.
- ☐ I completed each exercise in Chapters 1 through 3.
- ☐ I enjoyed writing in my Reflective Journal.
- ☐ I underlined key passages.
- ☐ I know the definition of *development*.

Checklist

method documenting the presence or absence of a skill or behavior in developmental sequence

closed method

observation noted without retaining raw data

creeping level. The teacher may plan activities in which the child is lifted to a standing position and supported for short periods of time.

Each criterion should measure the presence or absence of the knowledge, behavior, or skill. Checklists sometimes contain criteria that ask the recorder to judge or summarize groups of actions. For example, a Checklist item on small muscle skills may list the following:

_____ Coordinated eye/hand movements

The teacher observes the child putting puzzle pieces into the correct holes. The meaning or summary of that skill could be inferred as "coordinated eye/hand movements." This type of criterion leaves much room for interpretation and a greater chance that it represents a subjective

rather than factual, objective recording. Valid Checklists state specific knowledge, behaviors, and skills in developmental sequence, which describe exactly a movement, skill, or behavior. This leaves the recorder only to answer the basic question, "Is the child doing that or not?"

If Checklists were used in every skill or behavior, for every increment, in every developmental area, they would become unwieldy. Well-constructed Checklists are specific and limited to observable milestones. They are used with other methods of recording to document the specifics of observations. Remember that exclusively using one observation method will not present the whole picture of the child.

The Checklist is reused periodically to measure progress along the developmental continuum. To see the progression plainly, each notation on the Checklist could be

dated or coded to a date—for example, using a different colored pen for first, second, third, and fourth observations, along with the color corresponding to different dates. Using a different number, coded to a date, is another way to indicate when the criterion was attained.

If progress is not indicated by observing criteria farther along the scale, the teacher takes a closer look to be sure the data are correct. The Checklist may indicate significant lags that need to be explored further. Perhaps a discussion is held with the family, possibly referring them to helping professionals for a full evaluation. The decision may be made to just wait and watch for another period to see if the skills develop. Child assessment is more than a list of discrete skills to be attained. These are but small indicators that change is taking place within the child, changes that are complex and intertwined with each other. While checklists are efficient, they do not include the action and activity of growing and learning as the teacher sees it. Reading a Checklist gives little indication of what the child is really like. However, Checklists can be an important part of an overall assessment plan.

A Checklist is an effective tool to share with the family. It shows expected developmental progression and the level attained within those expectations. It indicates the dates of the observations and how much progress has taken place over that time. It may reveal accelerated or delayed development in specific areas, showing the child's strengths or areas yet to be developed (we do not call these weaknesses, just areas not yet developed). The Checklist becomes a permanent part of the child's Portfolio or file.

Checklists, and their content or format, can be modified to meet the needs of the recorder or program (see Figures 4-1 and 4-2). Many observers are entering the technological age, using tablets or computers to make, use, and analyze Checklists.

Checklists seem like they can be done from recall outside of the classroom, but memories are inaccurate and may be biased. The Checklists should be filled out from

EXERCISE

Mark the following Checklist items O for observed or I for interpreted or inferred.

- _____ 1. can sit unassisted for two minutes
- _____ 2. uses pincer grasp to pick up small objects
- _____ 3. enjoys pulling self up on furniture
- _____ 4. able to do most small muscle skills
- _____ 5. can walk six feet on a four-inch balance beam
- _____ 6. can cut
- _____ 7. moves gracefully
- _____ 8. increasing strength and dexterity
- _____ 9. gives little attention to small muscle activities
- _____ 10. balances on one foot for five seconds

Check your answers on page 112.

Birth Through Two Years Old	Date Observed	Date Observed
<i>Birth to 1 month</i>		
Engages in primarily reflexive motor activity		
Maintains "fetal" position especially when sleeping		
Holds hands in a fist: does not reach for objects		
Turns head from side to side when placed in a prone position		
<i>1-4 months</i>		
Rooting and sucking reflexes are well developed		
Grasps with entire hand; strength insufficient to hold items		
Movements tend to be large and jerky		
Turns head side to side when lying in face-up position		
Raises head and upper body on arms when placed on stomach		
Begins rolling from front to back by turning head to one side and allowing trunk to follow		
Can be pulled to a sitting position with considerable head lag (at beginning of period)		
Can sit with support, holding head steady, on lap or infant seat		
<i>4-8 months</i>		
Uses finger and thumb (pincer grip) to pick up objects		
Reaches for objects with both arms simultaneously; later reaches with one hand or the other		
Transfers objects from one hand to the other, grasps object using entire hand (palmar grasp)		
Handles, shakes, and pounds objects, puts everything in mouth		
Holds own bottle		
Sits alone without support, holding head erect, back straight and arms propped forward for support		
Pulls self to crawling position by raising up on arms and drawing knees up beneath the body		
Lifts head when placed on back		

FIGURE 4-1 Physical Development Checklist, Birth Through Two Years Old

FIGURE 4-1 *Continued.*

Birth Through Two Years Old	Date Observed	Date Observed
Rolls over from front to back and back to front		
Begins scooting backward, sometimes accidentally, when placed on stomach; soon will learn to crawl forward		
Enjoys being placed in standing position, sitting on someone's lap, jumping in place		
8-12 months		
Reaches with one hand leading to grasp an offered object or toy		
Manipulates objects, transferring them from one hand to the other		
Explores new objects by poking with one finger		
Uses deliberate pincer grip to pick small objects, toys, and finger foods		
Stacks objects; also places objects inside one another		
8-12 months		
Releases objects by dropping or throwing; cannot intentionally put an object down		
Begins pulling self to a standing position; begins to stand alone, hanging on furniture for support, moving around obstacles		
Creeps on hands and knees; crawls up and down stairs		
Walks with adult support		
May begin to walk alone		
1 year		
Crawls skillfully and quickly; gets to feet unaided		
Stands alone with feet spread apart, legs stiffened, and arms extended for support		
Walks unassisted (write age in months here)		
Uses furniture to lower self to floor, collapses backward into a sitting position or falls forward on hands then sits		
Pushes/pulls toys while walking		

(Continued)

FIGURE 4-1 *Continued.*

Birth Through Two Years Old	Date Observed	Date Observed
2 years		
Walks with a more erect, heel-to-toe pattern; can maneuver around obstacles in pathway		
Runs		
Squats for long periods while playing		
Climbs stairs unassisted (one step at a time)		
Balances on one foot momentarily, jumps up and down, but may fall		
Begins to achieve toilet training (depending on physical and neurological development) although inconsistent		
Throws large ball underhand		
Holds cup or glass in one hand		
Unbuttons large buttons, unzips large zippers		
Opens doors by turning doorknobs		
Grasps large crayon with fist; scribbles on large paper		
Climbs up on chair, turns around, and sits down		
Stacks four to six objects on top of one another		
Uses feet to propel wheeled riding toys		

Source: Adapted from Marotz & Allen, *Developmental Profiles: Pre Birth Through Adolescence*, 8th ed. 2016.

Professional Resource Download

direct observation. Checklists can be unwieldy if the recorder is trying to record all developmental areas on several children at once. The *Week by Week* plan suggests either selecting one child to observe over a period of a day in all developmental areas, or selecting one developmental area and observe all children in that area. Be sure the Checklist is broad enough to include skills and behavioral milestones at prior levels as well as future ones: Children's development is uneven, and a child may be functioning at a young level in one area and an advanced level in another. The unchecked criteria give guidance about curriculum planning. Many Checklists are covered by copyright. Either purchase the rating sheets or receive permission to copy them.

Three Through Eight Years Old	Date Observed	Date Observed
3 years		
Walks up and down stairs unassisted, alternating feet going up but one step at a time coming down		
Balances on one foot for a few seconds		
Kicks a large ball, catches a large bounced ball with both arms extended		
Feeds self; needs minimal assistance		
Jumps in place		
Pedals a small tricycle or other wheeled toy		
With crayon, uses vertical, horizontal and circular strokes		
Holds crayon or marker between first two fingers thumb		
Turns pages of a book one at a time		
Builds a tower of eight or more blocks		
Begins to show hand dominance		
Carries a container of liquid, such as a cup of milk, without much spilling, pours from pitcher into another container		
Manipulates large buttons and zippers on clothing		
Washes and dries hands, brushes own teeth but not thoroughly		
Achieves bladder control. (Write age here) ____		
4 years		
Walks a straight line (tape or chalk line on the floor)		
Hops on one foot		
Pedals and steers a wheeled toy, avoiding obstacles		
Climbs ladders, trees, playground equipment		
Jumps over objects 5 or 6 inches high; lands with both feet together		

FIGURE 4-2 Physical Development Checklist, Three Through Eight Years Old

FIGURE 4-2 *Continued.*

Three Through Eight Years Old	Date Observed	Date Observed
Runs, starts, stops, and moves around obstacles with ease		
Throws a ball overhand		
Builds a tower with ten or more blocks		
Forms shapes out of clay – cookies, snakes		
Draws some shapes and letters		
Holds crayon or marker between two fingers (not fist hold)		
Prints name and other words		
Paints and draws with a purpose; names drawings, but most are unrecognizable		
Threads small wooden beads on a string		
5 years		
Walks backward, heel to toe		
Walks unassisted up and down stairs, alternating feet		
Can turn somersaults		
Touches toes without flexing knees		
Cuts on a designated line		
Prints some letters		
Dresses self with minimal assistance		
6 years		
Can ride a bicycle without training wheels		
Walks across a balance beam		
Skips with alternating feet		
Body movements more precise but still some uncoordination		

(Continued)

FIGURE 4-2 Continued.

Three Through Eight Years Old	Date Observed	Date Observed
Shows well-established right or left handedness		
Writes numbers and letters with varying degrees of precision and interest		
Folds and cuts paper into simple shapes		
7 years		
Balances on either foot		
Bats balls, manipulates computer mouse, knits, paints with accuracy		
Practices new motor skills until mastered		
Uses eating utensils with ease		
Holds pencil in tight grasp near tip		
8 years		
Can play social games like team sports, dancing		
Improved agility, balance, speed, strength		
Takes care of own personal hygiene without assistance		
Copies words and numbers from blackboard with accuracy		

Source: Adapted from Marotz & Allen (2016). *Developmental Profiles: Pre-Birth Through Twelve*, Wadsworth Cengage Learning/Week by Week, 6e, pp. 82–83.

Professional Resource Download

4-1a Some Examples of Checklists

- *Teachers Safety Checklist: Indoor Spaces, Outdoor Spaces* (Marotz, 2015). A checklist to periodically assess the health and safety of the physical environment in an early childhood facility. Some of the items may be superseded by local or state regulations. (Figure 4-3, and Figure 4-12).
- The *Brigance Diagnostic Inventory of Early Development III* (Brigance & Glascoe, 2013) is a comprehensive online Checklist to assess development and diagnose developmental delay.
- The *Child Observation Record (COR)* (High/Scope Research Foundation, 2003) is an ascending Checklist for cognitive, movement, and social-emotional development dependent on Anecdotal Records (Key Experience Notes) prior to completing the Checklist.
- *Developmental Profiles: Pre-Birth Through Adolescence*, 8th ed. (Marotz & Allen, 2016) provides one-page-for-one-year developmental Checklists that give the milestones

Indoor Areas	Date Checked	Pass/Fail	Comments
1. A minimum of 35 square feet of usable space is available per child.			
2. Room temperature is between 68° and 85°F (20° and 29.4°C).			
3. Rooms have good ventilation: a. Windows and doors have screens. b. Mechanical ventilation systems are in working order.			
4. There are two exits in all rooms occupied by children.			
5. Carpets and draperies are fire-retardant.			
6. Rooms are well lighted.			
7. Glass doors and low windows are constructed of safety glass.			
8. Walls and floors of classrooms, bathrooms, and kitchen appear clean; floors are swept daily and bathroom fixtures are scrubbed at least every other day.			
9. Tables and chairs are child-sized and sturdy.			
10. Electrical outlets are covered with safety caps.			
11. Smoke detectors are located in appropriate places and in working order.			
12. Furniture, activities, and equipment are set up so that doorways and pathways are kept clear.			
13. Play equipment and materials are stored in designated areas; they are inspected frequently and are safe for children's use.			
14. Large pieces of equipment, e.g., lockers, piano, and bookshelves, are firmly anchored to the floor or wall.			
15. Cleaners, chemicals, and other poisonous substances are locked up.			
16. If stairways are used: a. Handrail is placed at children's height. b. Stairs are free of toys and clutter. c. Stairs are well-lighted. d. Stairs are covered with a nonslip surface.			
17. Bathroom areas: a. Toilets and washbasins are in working order. b. One toilet and washbasin are available for every 10–12 children; potty chairs are provided for children in toilet training. c. Water temperature is no higher than 120°F (48.8°C). d. Powdered or liquid soap is used for hand-washing. e. Individual or paper towels are used for each child. f. Diapering tables or mats are cleaned after each use.			

FIGURE 4-3 Teachers' Safety Checklist: Indoor and Outdoor Spaces

FIGURE 4-3 *Continued.*

Indoor Areas	Date Checked	Pass/Fail	Comments
18. At least one fire extinguisher is available and located in a convenient place; extinguisher is checked annually by fire-testing specialists.			
19. Premises are free from rodents and/or undesirable insects.			
20. Food preparation areas are maintained according to strict sanitary standards.			
21. At least one individual on the premises is trained in emergency first aid and CPR; first aid supplies are readily available.			
22. All medications are stored in a locked cabinet or box.			
23. Fire and storm/disaster drills are conducted on a monthly basis.			
24. Security measures (plans, vigilant staff, key pads, locked doors, video cameras) are in place to protect children from unauthorized visitors.			

Source: Adapted from Marotz, *Health, Safety and Nutrition for the Young Child*, 9th edition.

for that year. The text provides more specific information, learning activities, and developmental alerts.

- *Early Learning Observation & Rating Scale* (Coleman, West, & Gillis, 2010) is an observation Checklist across seven developmental domains to determine learning progress and possible early signs of learning disabilities.
- *Observing Development of the Young Child*, 8th ed. (Beatty, 2014) is a Checklist with an evidence column for three- to six-year-olds with ascending criteria in all developmental areas—child development and curriculum planning resources.
- *Ages and Stages Questionnaire*, 3rd ed. (ASQ-3; Bricker & Squires, 2009) is an age-related series of developmental screening questions to be answered by parents or primary caregivers and is designed to identify the few infants and young children who require more extensive evaluation.

The Work Sampling System 5th ed. (Meisels et al., 2013) has Checklist components in personal and social development, language and literacy, mathematical and scientific thinking, social studies, the arts, and physical development. It assesses children's skills, knowledge, behavior, and accomplishments.

4-1b Limitations to Checklists

Checklists do not preserve the details of a conversation where vocabulary, tone of voice, and exact words give the essence of the exchange. When just a check for the presence or absence of the criterion is the only record, the raw data—the facts of the observation—are lost. The observer sees behaviors and skills and makes a decision as to the presence or absence of the criteria. Once the checkmark or indication is made, there is no further notation about the event. You will notice that the items in the Checklists in Figures 4-1 and 4-2 (adapted from Marotz & Allen, 2016) are

TABLE 4-1 Method Recap

Checklist	
<p>The Checklist method of recording can be used for</p> <ul style="list-style-type: none"> • recording the presence or absence of predetermined criteria. • showing the sequence of developmental progress. • measuring progress. • screening for developmental lags. • as a curriculum-planning tool for individualized intentional teaching. 	
Advantages	Disadvantages
<p>The Checklist is</p> <ul style="list-style-type: none"> • time- and labor-efficient. • comprehensive. (It may cover many developmental areas in one Checklist.) • a documentation of development. • an individual documentation on each child. • a clear illustration of the developmental continuum. 	<p>The Checklist</p> <ul style="list-style-type: none"> • loses the details of events. • may be biased by the recorder. • depends on the criteria to be clearly observable. • may have many items to check, making it time consuming.

directly observable. While a checkmark is sufficient, recording the date when the behavior or skill is observed makes the documentation more detailed. The second row for dates is for the mastery of that skill. Beaty, in *Observing Development of the Young Child* (2014), inserts a column next to each criterion to use for note taking in order to make the Checklist more of an open method. Beaty refers to these notes as “evidence” because they retain details of why the observer made that judgment. Of course, it will be necessary to return to the lists periodically to record the child’s progress.

Checklists are useful for anticipating emerging development but give the teacher no guidance in intentional teaching to help the child reach the next milestone. They provide a snapshot in time, but there may be many intervening factors as to why, on that particular date, the behavior or skill is not observed.

The observer’s decision may be influenced by personal biases. The Checklist provides no way for the reader of a completed checklist to form an independent opinion. The reader has to trust the recorder’s judgment. This shortcoming of Checklists can be overcome by having various individuals recording with the Checklist. This gives more than one person’s opinion regarding the criteria, called inner-rater reliability. Because of its lack of detail, the Checklist is not a method that is reliable for documentation of suspected child abuse.

4-1c How to Find the Time

Checklists are not time consuming if you select only a portion of the Checklist and observe all the children for the chosen developmental area. On another day, select a different developmental area. This procedure will help you to focus your attention on one type of behavior, and you can observe each child in that particular way. The *Week by Week* plan provides a system for recording every developmental domain, for each child, several times throughout a school year.

Using Technology. A Checklist can easily be loaded onto a tablet or smart phone. In the classroom, all you have to do is open the document, check off what the child has attained, and save the document with the child’s name. It can later be downloaded into the child’s electronic Portfolio.

PORTFOLIO EVIDENCE OF CHILD'S DEVELOPMENT			
Evidence Type	Date	Recorder	Notes
PHYSICAL – the child's large and small muscle development, abilities in self-care routines			
CL	9/14/	BAN	Needs help handwashing
AR	9/19/	MLS	Learning handwashing song
CK	9/23/	BAN	Physical devel. – small muscle, plan special activities
AR	10/15/	MLS	Episode in blocks, piles small blocks 5 high
CK	12/17/	MLS	Improved small muscle devel.

FIGURE 4-4 Portfolio Evidence Sheet Example

● Home Visiting: Checklists

The examples of Checklists for monitoring development are also appropriate to use in the home setting. Many home visiting programs have chosen *Ages and Stages* (Bricker, 2009) because of its “user friendly and parent involvement” format. Because of the limited time in the home, relying on parent reporting is most helpful, with one caveat: Parents may not differentiate between an emerging and accomplished skill. For example, a toddler may accidentally kick a ball while trying to chase after it; the parent may interpret that as child is “able to kick a ball.” It is important that home educators plan activities that allow the educator (and parent) the opportunity to observe both emerging and accomplished milestones found on chosen protocol.

EXERCISE

Draw a picture frame like the one in Figure 4-5. Make a list about yourself in each of the categories around the frame. Then read about how these descriptions “frame” what you see when you observe a child and then read about some of the “blind spots” that you may have.

frame of reference
individual point of view
influenced by many factors

4-1d What to Do with It

Programs usually purchase a commercially developed Checklist or devise their own Checklist to match program goals and the age range of the children in the program or class. An individual Checklist is kept in each child's Portfolio or file and noted on the Portfolio Evidence Sheet (Figure 4-4). Periodically, the recorder re-examines each developmental area. It is objective only as long as the Checklist closely describes exact observable behavior rather than vague generalizations that may be interpreted many ways.

Families have access to this Portfolio and the Checklist. It is a good tool to show families the developmental sequence and the documentation of their child's accomplishments. Focusing on the accomplishments rather than the areas yet to be attained is a positive way of evaluating a child's development.

4-2 Your Frame of Reference

Everyone looks at the world through a unique **frame of reference**. That frame of reference can be compared to a picture frame to help understand the concept (Figure 4-5).

A frame is the boundary or outer limits around a picture. Each person's understanding or “vision” is limited by boundaries different from every other person's, formed from past experience but influential in viewing the present and the future. The teacher must consider this when observing children because it determines how the child is viewed. Some experiences that form the frame of reference follow:

4-2a Cultural Self

Because of the “melting pot” nature of our society, you may not identify with a specific culture, but your identity involves more than your ethnic heritage; it includes values adopted from our families and society influenced by socioeconomic level, race, religion, and gender. These define your **cultural self** and subconsciously reflect on your own childhood. These factors also influence how you see the child.

4-2b Education and Training

The educational level and philosophies learned affect the teacher’s perceptions and judgments of the child being viewed. Philosophies of the training curriculum influence what meaning you attach to what you see.

4-2c Past Experiences with Children

Many people working with children have had experiences as parents and grandparents, or may have started out their career caring for younger siblings, performed babysitting as a teenager, and now are caring for extended family members. Those new to the profession, with little experience, are going to see behavior and incidents differently from those with much experience.

4-2d Own Learning Styles

With the advent of more knowledge of individual learning styles, it becomes clearer that a teacher’s learning style is as important as the student’s. The observer will absorb information in different ways:

auditory learner—from language and sounds the child makes

visual learner—from actions, scenes, and pictures of the child’s behavior

tactile learner—from touching the child

4-2e Smudges on the Glass

The frame of reference is the perimeter, but the viewing is done through the glass. There may be smudges on the glass that are biases that keep the observer from seeing the child objectively.

4-2f Biases For or Against the Child

Individual bias and prejudice are human factors that may interfere with a clear view of the child. Those biases may even be positive ones, such as the child’s attractive appearance or charming personality, causing the child’s needs to be overlooked because of personal feelings that get in the way. Strengths of the child may be overlooked because of a prejudice or bias that will negatively affect objective observation. Consider the following:

sex—may prefer boys or girls

hair color—may love or hate redheads

racial or ethnic—stereotypic beliefs

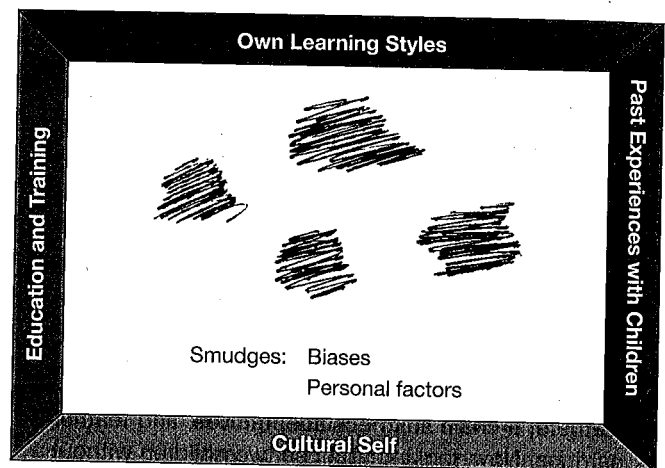


FIGURE 4-5 Frame of Reference

cultural self
individual's self view of genetic and societal characteristics

bias
preconceived ideas that may affect objectivity

It Happened to Me

"BMW vs. Harley"

One year I had two little girls in my preschool class. One, whose mother brought her in her BMW, parked at the end of the sidewalk in the No Parking Zone, and the mother swooped in on her high heels and full-length fur coat. In the same class was another little girl whose mother drove her to school on the back of her Harley. This mother clanked in wearing full leathers, a chain link necklace, tattoos, and feather earrings. Now, looking at those two children without the smudges on my frame of reference because of these facts was very difficult. I had to be honest with myself and trust objective recording methods to filter out those biases. *What possible biases might you have if you were in this situation?*

economic or social status—rich or poor may interfere with how the child is perceived
personality clashes—may love or hate children who are whiny, mischievous, active, sassy, bold, shy
prior contact with the family—older child was in the class
physical attributes—beauty, handicaps, weight
hearsay—prior teachers influence opinion

4-2g Personal Factors That May Affect Observation

Adults may have their own situations that have nothing to do with the child but may affect the observer enough to interfere with objective recording:

health—headache, awaiting test results, impending surgery, pregnancy, or premenstrual syndrome

stress—financial, personal, or workplace tension

outside pressure—gathering evidence to document a decision or a referral

The observer's consciousness is raised on these issues through reflection. Some days might not be good ones to gather information and make decisions. The professional acts ethically.

By selecting objective observation methods, and by communicating and sharing observations with co-workers and parents (informally or through conferences), these biases can be minimized.

From your exploration of your own frame of reference, what cultural values or biases may influence how you look at a child and interpret the child's behavior?

TOPICS in OBSERVATION • Mindfulness

EXERCISE Why did you choose a career working with children? List your reasons.

As you reflected on your Frame of Reference, your own childhood may have not been a storybook life. You may have suffered from emotional, physical, or sexual abuse or were exposed to extreme poverty, domestic violence, substance abuse, or mental illness. You have survived it and have made a life for yourself, pursuing your education with the desire to help children who have suffered some of the same things you did. That is an admirable motivation. However, something to consider is the need to keep yourself

healthy in order to help others. It's the "put on your own oxygen mask before you help others" practice. People who work with children need to be physically and emotionally healthy; this is critical for meeting the demands of caring for and supporting them.

Mindfulness is an age-old technique found to be a key element in happiness. It is paying close attention to our thoughts and feelings without judging them, without rehashing the past or imagining the future. It is being in the "present." This can be accomplished in a number of ways: deep breathing, noticing body sensations, recognizing your emotional state without judgment.

Mindfulness improves your physical health by helping relieve stress and keeping the body functions of heart rate, blood pressure, digestion, and sleep in tune and giving you more energy. It improves mental health by decreasing anxiety, lowering the risk of depression, and reducing relational conflicts.

So observe not just the children but yourself. Take stock of your body and mind in the moment. Take a deep breath, relax, and be mindful.

mindfulness

attending to thoughts and feelings without judgment

4-3

Looking at Physical Growth and Development

Bodies change. They grow and develop. What is the difference? Growth refers to changes in size, quantitative change, and those changes that can be measured in increasing numbers such as height, weight, head circumference, and teeth:

growth
quantitative change that can be measured in numbers

- Most infants range in length from 18 to 21 inches at birth and are expected to grow longer and taller.
- By 36 months, the toddler has molars and a total of 20 “baby” teeth, and is expected to grow more.
- The average five-year-old weighs 38 to 45 pounds and is expected to increase in weight as she grows older.
- Between the ages of six and eight, the body takes on a lanky appearance as arms and legs grow longer, with permanent teeth replacing baby teeth, and developing more adult-like features.

EXERCISE

Using a separate sheet of paper, list five phrases to describe your body.

Read the chapter, then return to your descriptions and mark them G for growth areas and D for development areas.

There are norms, or averages, established by statistical analysis of large groups of people. These are the established ranges for average growth of weight and stature at specific ages (Figure 4-6). Tables like these can alert observers to significant variations that warrant further investigation for the cause.

Other changes can be measured in numbers that are not physical. Vocabulary also “grows” because it can be measured in numbers. The toddler has a vocabulary of 50 to 300 words. The attention span is growing too. It can be measured in seconds, but sometimes in minutes and even hours if the child is interested in the activity. Attention span is expected to increase as the child matures.

Development is also change, but qualitative change, increasingly better, more complex, and more coordinated. Development, like growth, occurs in sequential, predictable stages, yet is different for every individual based on several factors. Physical development, involving both large and small muscle coordination, begins with reflex actions and progresses to rudimentary, then fundamental movement quality during the preschool years. It forms the basis for refinements that are used in all active sports.

reflex
muscle reactions to stimuli, not controlled by intent

As you can see from Figure 4-6, in the first eight years, boys and girls weigh and measure very much the same. As puberty approaches and occurs there is a widening gap between weight and height between girls and boys.

Many factors affect growth and development (Figure 4-7):

- Genetics determines thousands of characteristics of growth and development, such as body size, sex, and coloring.
- Prenatal care, including the mother’s nutrition and physical condition, and even age contribute to prebirth growth and development.
- Health factors, such as preventive care, diseases, illnesses, and accidents in childhood, can affect both the growth and development of the body.
- Environmental factors, such as nutrition, quality of air, and geographic location, affect physical growth and development.
- Age or maturation is a determining factor in the changing body’s size and development.
- Social factors, such as opportunities, experiences, and role models, affect development.
- Economic level has an effect on both physical growth and development through nutrition, experiences, and opportunities.

EXERCISE

List all the factors you can think of that affect physical development. Now read on and see how many factors correlate to your list.

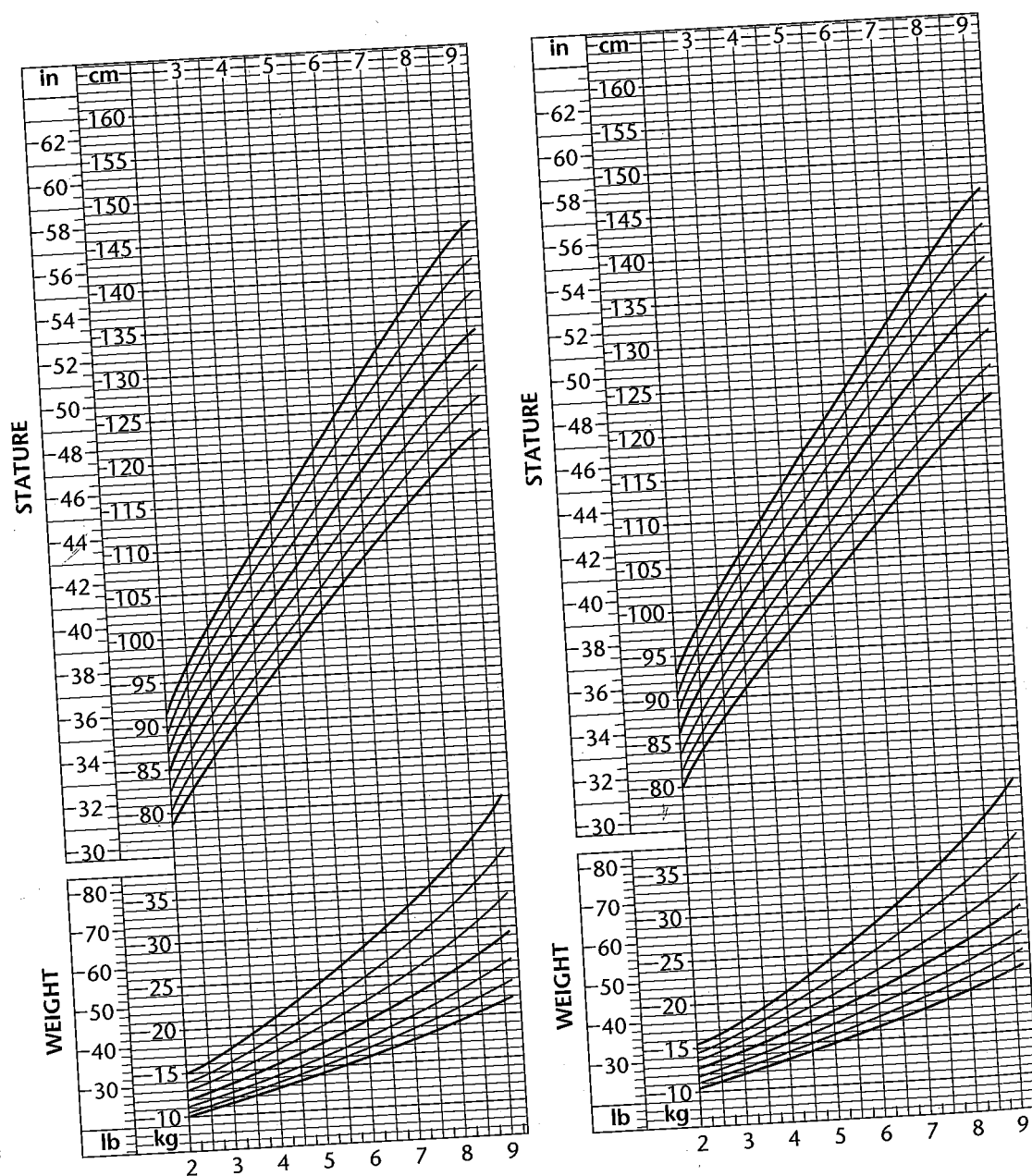


FIGURE 4-6 Height and Weight Charts

Source: Kuczmarski, et al. 2000, National Center for Health Statistics

- Other areas of development have a reciprocal influence, each influencing the other:
- Cognitive development affects physical development. As the child's thinking changes to higher levels, her movements change. She can do a more complex puzzle, not just because of physical dexterity, but because of the ability to visualize pieces of the whole. It is also through physically manipulating materials that the child's cognitive structures build, experiencing soft and hard, hot and cold.
 - Language and physical development are interdependent. As the child physically develops, he also learns new vocabulary for movements (jump, skip, pirouette). By following verbal directions—processing language—he learns how to perform physical tasks. "Hold the bat up straighter, away from your body."

- Social interactions with other people encourage physical development. By imitating the actions of others, children learn to perform tasks such as painting, swinging, and riding a bike. As they perform these actions, they are enhancing both their social and physical development as they play and work cooperatively.
- Emotional deprivation has been known to stunt physical growth (**failure to thrive syndrome** is described in Chapter 12). Emotional development is affected by body growth. Abnormal growth and physical disabilities can affect self-esteem, which influences development because lack of confidence can make someone awkward.

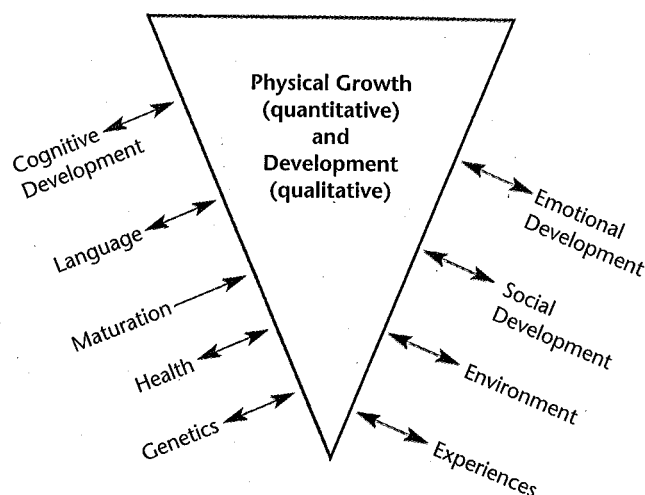


FIGURE 4-7 Interrelated Factors in Physical Growth and Development

4-3a Common Characteristics of Development

There are some common characteristics of all areas of development: Predictable sequences with individual differences are very evident in physical development (Figure 4-8).

Predictable Sequence. Development and coordination (voluntary control of the muscles) occur in predictable directions. The infant first gains control of the head by using neck muscles, then the shoulders and torso. When development reaches the thighs and calves and toes, real crawling and creeping are accomplished. This head-to-toe direction of development is described as **cephalocaudal**. The development of physical control from the center of the body outward—control of the shoulders and arms comes before hands, then fingers—is described as **proximodistal**, or “near to far” (Figure 4-9). This predictable sequence of development is common among all developing species because each milestone depends on the prior one in preparation for the next. Muscles that are needed to walk are preceded by those developed in learning to rollover, crawl, and pull up to a standing position. Muscles needed to write are preceded by those developed in using the hand to grasp and let go.

Individual Timetable. Some infants purposefully pick up their head and look for the source of a voice or sound by one month. Some do this earlier than others. Some children are walking by 10 months, and others not until 16 months. A baby will not walk until she can. An adult cannot make a baby walk before the muscles are strong and coordinated enough to accomplish the task. There are milestones in every area of development that are predictable; one almost always comes before the next, but when each child reaches each one may be different. There is a timetable of range of normal development, affected by the factors already discussed. Observation is important in order to note and track when those milestones are attained and will help determine if there is a developmental lag outside the range of normal that may be of concern. Informed families and knowledgeable early childhood professionals watch for indicators of milestones as proof that the child is developing within the range of normal. Cultural values may affect the attainment of physical milestones such as walking, self-feeding, or toilet training earlier than others by encouragement and expectations. The disappearance of safe, natural play spaces in urban areas may inhibit the development of certain physical milestones such as ball play or bicycle riding.

Readiness. Physical development vividly illustrates the predictable, sequential, individual aspects of development. In other areas of development, such as emotional and cognitive development, the stages are not as easily observed. This visual reminder is an

failure to thrive syndrome
developmental delays caused
by physical or emotional factors

cephalocaudal
sequence of development of
muscle control from head to toe

proximodistal
development of muscle
control from center of body
to extremities

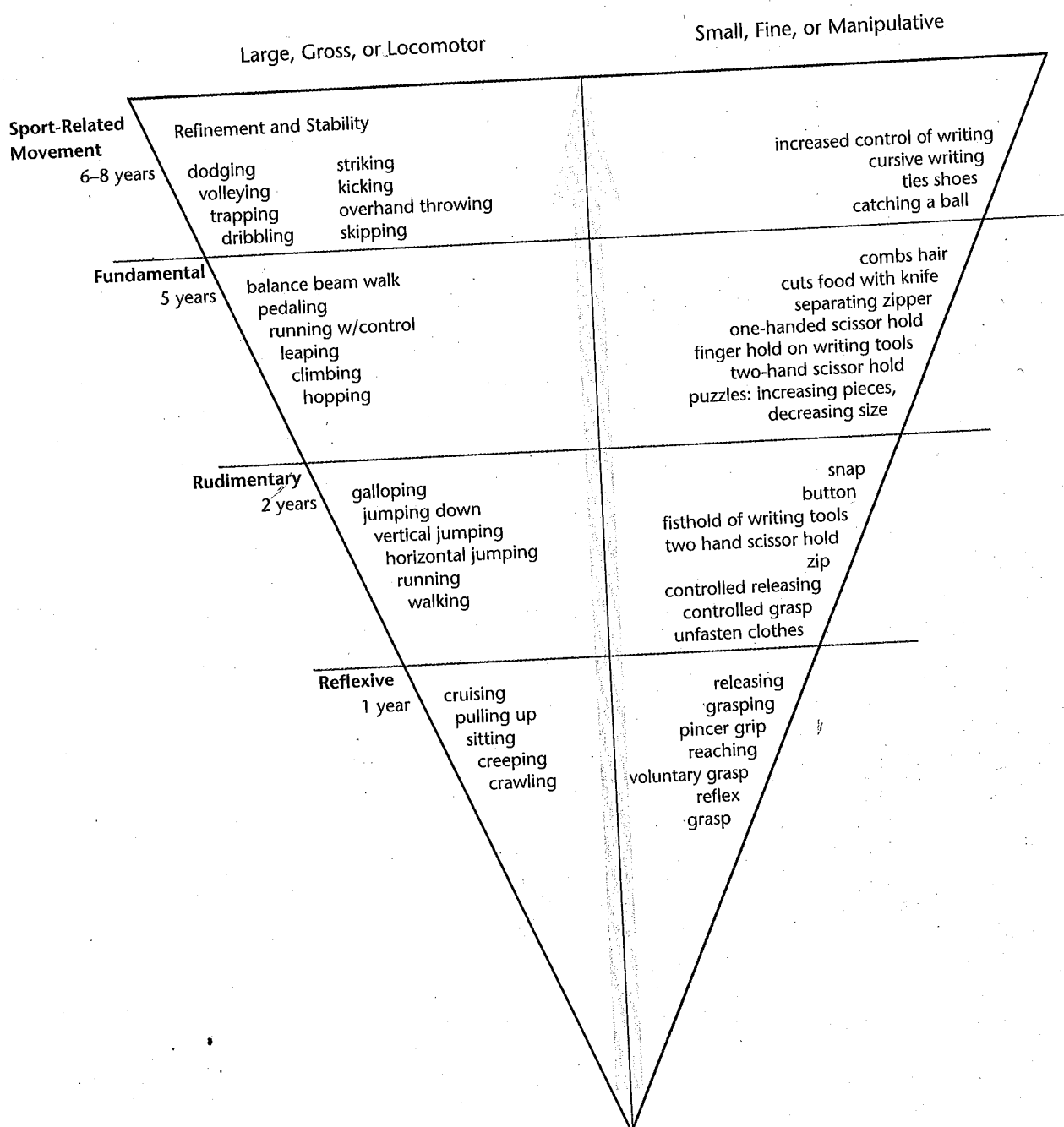


FIGURE 4-8 Muscle Control and Skill Development

large muscle
(gross motor) muscles used
in moving the body from one
place to another

small muscle
(fine motor) muscles that control
hands and fingers

important concept to apply to intentional teaching in all areas. The child's body and mind must be ready before she can accomplish the skill. All the other steps have come before it to lead the way, serving as a benchmark of readiness for the next step.

By the age of one and a half, a child has accomplished the basic physical skills of mobility (large muscle, also known as gross motor) and manipulation (small muscle, aka fine motor). The next 48 months will see vast increases in coordination and integration of all body structures. By the time children are five, they have acquired body control. The skills of walking,

running, climbing, balancing, pushing, pulling, lifting, carrying, throwing, catching, and striking prepare them for life functions and all the sports and recreation skills.

4-3b Small Muscle Development

The coordinated functions of arm, hand, and fingers are often taken for granted.

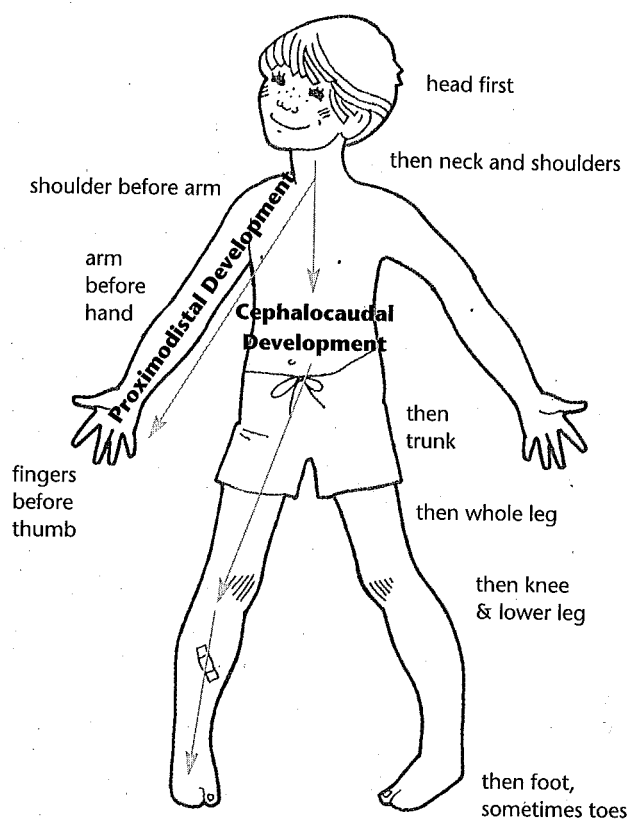
For the first few months of life, the small muscles of hands and feet are moved by reflex, rather than by purposeful movements controlled by thought. Apply pressure to the palms of the infant, and her mouth opens and her head flexes forward (Babkin reflex). Stroke her palm, and her hand closes into a grip around the object so strong it can hold her weight. Stroke the sole of her foot, and her toes extend. Over the course of the first year, the infant develops control over these small muscles, first by reaching, coralling, and grasping with the entire hand. By age one, the infant can use the thumb and forefinger in a pincer grasp. Letting go (releasing) comes later than grasping. This explains why an infant holding onto an earring or a lock of hair has a hard time letting go of it.

These small muscle skills are connected to hand-eye coordination, the cephalocaudal and proximodistal development of the whole body, and thought processes. They will continue to develop into the more specific motions needed to twist, squeeze, pinch, button, snap, zip, pour, pick up small objects, insert, and cut. All of these skills are leading to the achievement of readiness to write. Other developmental skills also signal that the child is ready for writing:

- balance without using the hands
- grasp and release objects voluntarily
- handedness predominates, with one hand leading and the other following
- hand-eye coordination
- construction experiences—putting things together, parts and whole concept
- increased attention span

The developmental sequence is

- scribbling, holding tool in a hammer hold
- scribbling, with finger hold
- control of tool to close a circle shape
- making straight lines
- drawing with the characteristics of writing
- beginning of alphabet letters
- ability to make a square
- printing name—in uppercase letters
- printing name—in uppercase and lowercase
- left-to-right progression of letters and words



Gaining Control of Muscles in a Downward and Outward Sequence

FIGURE 4-9 Cephalocaudal and Proximodistal Muscle Control

EXERCISE

Pick up each of the following items: chair, book, dime, hair. Perform each of the following tasks: zip a zipper, tie a shoe, write your name. Now perform the above tasks with your non-dominant hand. Notice the different movements and functions of your small muscles.

Observing Small Muscle Development. The physical environment includes materials and opportunities for the child to practice small muscle skills. The baby touches and grasps any objects within its reach, appropriate or not: Grandpa's glasses, a hot coffee cup, or a dust mote floating through the air. The toddler grabs, carries, dumps, fills, manipulates whatever is movable: toilet paper, stones in the driveway, knickknacks on the coffee table, or items on the supermarket shelf. The preschooler practices writing with whatever tools are available: a stick in the dust, Mommy's lipstick, or a paintbrush in tar. It is important for the observer to watch what the child is touching, then evaluate its potential for harm. If necessary, the adult intervenes before damage is done to the child, the object, or the environment.

The observer in an educational setting sees the movements as indicators of development and documents what the child can do on this date so that periodically the record is updated to check if progress is being made. Knowledge of the child's abilities at this stage influences the kinds of equipment, materials, and activities the teacher provides. An infant is given items that are easy to grasp and offer some immediate signal, such as a rattle or a toy with a bell or squeak. The toddler is given items to stack, fill and dump, pound, squeeze, and manipulate, such as clay dough and puzzles with simple, large pieces. The preschooler is provided with smaller manipulatives such as building bricks, puzzles with smaller pieces, lacing cards, scissors, and a wide array of writing tools and papers. Activities to help develop the whole arm, whole hand, and pincer grip all contribute to the preschooler's increased small muscle development used in writing (Huffman & Fortenberry, 2011).

The small muscle task of the early school grades is handwriting. How children should learn handwriting has evolved from the Montessori method of tracing letter forms, pages of practice, copying words, to emergent literacy believing that when the child finds it important to convey a message in writing, they will produce a resemblance of the letters. Children commonly grasp writing tools tightly and press down hard enough sometimes to tear the paper. There are various forms of printing: printscript is the common letter form, and D'Nealian print has more slanted lines that appear between printscript and cursive writing. Distinguishing between some letters is difficult, such as b and d, E and F, n and m. Experiences with print, the child's own motivation, and the classroom environment as well as small muscle development all influence the child's handwriting ability. Sometimes having a list of children's names to copy, using children's names on a waiting list for a certain activity, and planning a daily journal-writing time are activities that stimulate handwriting.

Documentation of small muscle development can be made with Checklists, Anecdotal Records, and samples of the child's work on paper. The first scribbles, the first alphabet letters, the first name writing, and the first "I love you" note are precious and graphic illustrations of the small muscle development as it leads to literacy. These are important evidence to be added to the Portfolio and shared with families to illustrate the child's small muscle development. Stages of small muscle development also are integrally involved in both art and literacy and are discussed again in later chapters.

EXERCISE

Turn the sound off on a television show. Observe just the facial and body movements of the people you are viewing. What does that tell you about that person?

4-4

Physical Development and Other Areas of Development

The principle was illustrated that developmental areas are interrelated (Figure 4-7). Here are a few examples of the two-way effects of physical development:

- *Cognitive development*—Learning affects physical development; for example, watching someone else perform a physical skill while practicing a physical skill can imprint the brain to perform that skill. Sensory experiences build brain connections.
- *Language*—Verbal directions can tell the body to move in a certain way, and new vocabulary describes body movements.

- *Maturation*—As one ages, body movements are perfected; and as the body develops, more complex activities can be performed.
- *Health*—Good health habits can positively affect development, while diseases and illnesses can negatively affect development.
- *Genetics*—Inherited diseases or disorders can affect physical development, but development probably does not affect genetics.
- *Emotional development*—Personality and mood can affect how the body moves, and physical development affects emotions such as pride or self-consciousness in physical activities.
- *Social development*—Friends and family influence the types of physical activities to which one is exposed, and physical development determines the kinds of activities in which one engages.
- *Environment*—Geographic location, for example, may influence whether one learns to surf or rock climb, and physical development will affect the kinds of activities one attempts.
- *Experiences*—The kinds of opportunities one has, such as ballet or horseback riding lessons, affect physical development; and physical development affects the kinds of experiences one selects.

In the early years, lifelong habits are formed, and regular physical activity leading to healthy fitness habits is no exception. The Centers for Disease Control and Prevention, National Association for Sport and Physical Education, and the National Association of Early Childhood Specialists in State Departments of Education all recommend regular periods of active free-play time for preschool and elementary school children (Ramstetter et al., 2010).

4-4a Physical Development and Health and Obesity Concerns

Early physical development and fitness affect lifelong health in areas such as posture, balance, muscular strength, cardiovascular endurance, and body leanness. Declining fitness and tripling of obesity rates in children over the last 25 years are national concerns. The alarming increase in rates of heart disease, diabetes, and high blood pressure are connected to decreased physical activity. Body mass index (BMI) has been rising for children 2–19 years of age, with a significant racial disparity with Hispanic adolescent boys and non-Hispanic black girls having the largest increase in obesity (Ogden & Carroll, 2012). In 2010, the United States Department of Health and Human Services launched Healthy People 2020, a continuing campaign to advocate and plan for a more active population. Early and middle childhood objectives are documented to track measures to improve the physical, cognitive, and social-emotional foundation for lifelong health, learning, and well-being. This initiative recognizes that first years of life are critical to the prevention of adult health and medical conditions. Milestones of development can be delayed or negatively impacted by risk factors that can affect the brain and other areas of development.

There is concern over a widening health gap facing children of poverty—almost half of America's children under six years of age, with a disproportionate number who are black and Hispanic (Addy, 2013). Children from low-income homes are almost five times more likely than their higher-income peers to be in less than optimal health (Miller, Sadegh-Nobari, & Lillie-Blanton, 2011). Social issues such as food insecurity and poor nutrition, homelessness, exposure to environmental toxins, and limited health knowledge contribute to poor health and negatively affect physical as well as cognitive development (Arkin, 2009). These early deficits to health set a pathway for poorer health over a lifespan (Figure 4–10).

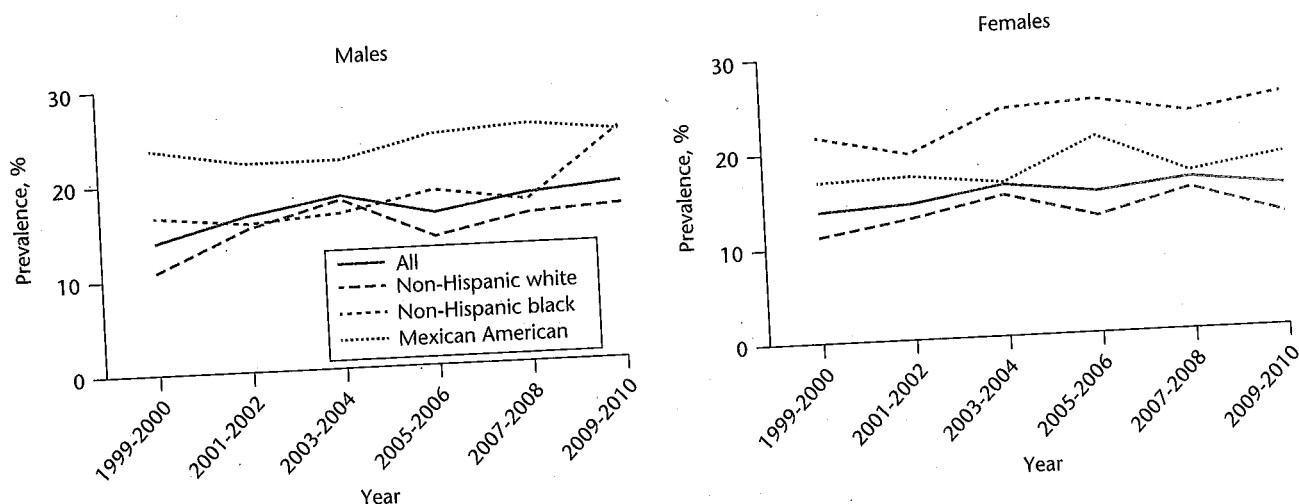


FIGURE 4-10 Trends in Obesity

Source: Ogden & Carroll, 2010; NCHS Health E-Stat

There are many potential factors leading to decline in physical activity: a reduction in physical education classes, increased availability of sodas and snacks in public schools, growing numbers of fast-food outlets across the country, “super-sizing” food portions in restaurants, increased numbers of high-fat grocery products, plus the explosion of media targeted at children with advertising campaigns that promote foods such as candy, soda, and snacks. Preschool children viewed an average of 11 food and beverage ads a day, adding up to more than 4000 in the year 2011 (Dembark, 2013). In a review of child health literature, increased television or screen viewing was found to be associated with unfavorable measures of obesity and decreased scores of psychosocial health and cognitive development (LeBlanc et al., 2012). The reduction of recess time (unstructured play) to give more time to academics or as a punitive measure for misbehavior negatively impacts the positive effects of active play on a child’s physical, creative, social, and emotional development (Ramstetter, 2011). And even formal physical education programs and free-time recess periods find children less active than a generation ago.

Little research is available on children under the age of two, but there is increasing concern regarding this link between electronic media (television and videos) and decreasing physical activity. A large study found that in a typical day, in children under six, screen media use equaled reading or being read to (Rideout et al., 2006). The American Academy of Pediatrics issued a policy statement in 2011 discouraging any viewing for children under age two and limiting viewing to two hours a day for preschoolers (American Academy of Pediatrics, et al., 2011). In 2013, the Academy made recommendations to pediatricians to ask parents and patients about media use, encouraged them to discuss food advertising as they monitored TV viewing, and to limit non-educational screen time to less than two hours a day, with none before the age of two years. The recommendations especially linked having a TV in a child’s bedroom to obesity risks. The Academy called on pediatricians to be advocates in their own communities as well as to Congress regarding the harmful effects of media for obesity and its related diseases, social and emotional disturbances, and to be proponents of program and community efforts to instill a lifestyle of regular exercise (AAP, 2013).

Changes in family structures, with both parents working outside the home and turning child-rearing over to others or to the children themselves, has been blamed for children not playing actively. Violence in the neighborhood has also kept some children from

playgrounds or from playing outside in the street or yard (Burdette, 2005). Schools have been reducing their emphasis on physical education as mandates for improved academic performance and budgetary woes increase.

Health-related physical fitness involves four components that can easily be incorporated into the early childhood curriculum:

muscular strength and endurance (the force both large and small muscles can produce developed from exercising longer)—climbing, jumping, pumping on a swing

flexibility (range of motion in a joint developed by slow stretching and movements)—pretend movements such as climbing, reaching, not bouncing while stretching

cardiovascular efficiency (heart, lungs, and circulatory system)—walking, playing tag, marching, riding a tricycle, dancing, jumping rope

body composition (ratio of lean tissue to body fat affected by heredity, nutrition, and lifestyle)—nutritious meals and snacks, physical activity (Graham et al., 2004; Pica, 2010)

4-4b Physical Development and the Brain

The physical changes we see in the body growing and developing are accompanied by amazing changes in the brain and the rest of the nervous system. The neurons or nerve cells are developing and connecting by synapses that are being strengthened and pruned in the first year of life through sensory and kinetic experiences (Banich & Compton, 2011). While the importance of early physical activity to lifelong fitness is obvious, researchers are finding its importance to cognitive and emotional development as well. Neuroscientists studying the brain with Positron Emission Tomography (PET) scans observe and measure brain activity levels. Physical movement that involves both hemispheres of the brain, such as creeping and crawling, heighten cognitive functioning. As the infant's brain is developing, sensory systems such as vision, hearing, taste, smell, touch, balance, and body awareness are functioning at their most primary stage. The body's central nervous system is beginning to integrate these systems. Crawling has been found to be an important milestone in development, coordinating arms and legs on opposite sides involving each side of the brain cortex and brain stem. Using both hemispheres of the brain precedes the ability to walk, run, and pass objects from one hand to another. As the baby crawls she is developing other balance and perceptual systems, grasping objects and coordinating visual impulses through body locomotion. All these neurological connections link the body and the brain (Sanudo-Diez, 2008).

As the infant continues to grow and develop, this integration comes under the control of the infant, and responses to senses become automatic and unconscious. This **sensory integration** allows the brain then to process more complex information, a multisensory experience. When this integration is interrupted for some reason, it may result in the child acting disorganized, confused, and frustrated, and may ultimately interfere with learning (Isbell & Isbell, 2007). Early perceptual sensory-motor experiences can increase brain functioning and lead to cognitive gains. There is no doubt that exercise and good nutrition are necessary for learning and growing. As children become more mobile, cruising, creeping, toddling, it should not be surprising that their vocabulary is rapidly increasing as they add more nouns in answer to their constant, "Whaddat?" This demonstrates the interplay of physical, cognitive, and language development domains.

Even though physical play is in the social domain, Pica (2010) reminds us that the mechanisms involved expand the realm of cognitive benefits as well. Movement and physical activity affect other domains of development, and movement-related concepts can be incorporated into learning activities to positively impact learning. The interplay of mind and body is not surprising but is a re-emphasis of the importance of physical activity to overall success in learning and living.

sensory integration
information taken in through
senses and organized for
controlled body reactions

4-4c Physical Development and Social-Emotional Development

There is no doubt that physical activity that promotes physical development prevents illnesses and diseases connected with poor nutrition and sedentary lifestyles and that it builds synapses in the brain through multisensory experiences. It has a positive effect on social capacity by building positive relationships through play, enhancing the feeling of community and building trust and collaboration skills.

Runners and dedicated exercise enthusiasts attest to the fact that their emotions and self-esteem are heightened when they push their bodies in strenuous physical exercise. Endorphins are released that bring about a euphoric feeling of well-being. Cortisol, the hormone released during stress, undermines neurological development and can affect cognitive, motor, and social development. Pica (2010) makes the case for the importance of physical development beyond fitness, emphasizing the relationship to social-emotional, creative, and cognitive development. She relates movement to all curriculum areas.

Childhood obesity has become a national concern, with the trends rising for school-age children, especially among non-Hispanic black and Mexican American children. The interrelated factors of physical development may not affect health, but can cause children (especially girls) to be ridiculed and rejected, which may cause low self-esteem and lead to unhealthy dieting and food-related problems such as bulimia and anorexia.

4-4d Intentional Teaching for Physical Development

It is the teacher's role and responsibility to provide a safe environment and learning experiences to meet the developmental needs of the children. Usually the classroom space is predetermined, so the teacher makes decisions on furnishings and room arrangement based on teaching philosophies and priorities for space, as well as on the age and stages of development of the children in the group.

Through physical development and achievement, children's self-esteem and confidence are enhanced. Go back and take a look at Figure 4-7. Note the arrows go both ways. Physical development is influenced by those factors just as those developmental areas are influenced by physical development. Cognitive and emotional development can have an effect on physical development. Kindergarten-age and primary-age children are more attentive after recess; they stay on task longer and can resist fidgeting (Pellegrini & Holmes, 2006).

Besides helping children be more engaged learners after physical activity, educational concepts can be introduced through physical activity, mathematics (counting in games), science (movement activities that teach about the body), the arts (movement, drama, dancing), and literature (acting out stories). Almost any educational objective can be enhanced by getting children actively and physically engaged.

Planned activities can be documented using different methods to indicate the child's reaction to the experiences and development of skills. Over time, this record becomes valuable evidence of the efforts and celebrations of accomplishments. The developmental Checklists show skills for practicing and improvement and list the next skill that is to be introduced and encouraged. Vygotsky (1978) calls this the zone of proximal development, the "distance between the actual developmental level . . . and the level of potential development . . . under adult guidance or in collaboration with more capable peers" (p. 86). With the help of an adult or another child, the developing child can approximate the skill before he really can accomplish it on his own. This brings promise and a feeling of success, and builds rapport with those who support the attempt. Wilson (2011) recommends providing observation and recording tools for children for outside play such as hand lens and clipboards, using natural materials for art projects, and involving children in growing plants and caring for animals.

Intentional teaching refers to assessments to determine the level of motor development each child has attained. Daily plans for the whole group include a variety of large

It Happened to Me

He Sure Can Cut!

We had been working with Andy's small muscle skills, finding ways to interest him in trying some cutting instead of always playing with blocks and on the climber. We found some construction machinery catalogs and invited him to cut and paste to make a book to take home. He worked for several days at it, and we saw those cutting skills improve so dramatically we sent home a "Happy Note" about the news. Mom came in a few days later and said, "You know those cutting skills you've been working on with Andy? He's been working on them at home too. He got the scissors and cut up all the chains in my jewelry box into little pieces!" Gulp! Teaching should come with disclaimers, "We cannot be responsible for the application of newly learned skills in a unsupervised environment." *This disclaimer is in jest, of course, but what steps would you take to ensure safety in the environment for new physical development skills?*

muscle activities and address the key experiences previously discussed. Individual children benefit from specifically focused activities to help them achieve the next level of development. They must, however, have many opportunities for success at their present level without feeling pressured or required to try something they are not sure they will attain. The skillful teacher addresses needs by combining planned activities with the child's interests; like the song says, "A little bit of sugar helps the medicine go down."

Older infants and toddlers begin the quest to explore beyond their bodies. Toys and activities to manipulate and move are a necessary part of the curriculum. Activities are planned for interaction with adults and materials chosen to keep interest. The adult models and introduces new ways of playing.

Locomotor movement, such as creeping and crawling, transfers weight from one side of the body to the other. This is a necessary skill for walking because all the more complex skills build on it. To stimulate creeping and crawling, interesting objects and pictures are placed at floor level, not too far away to be frustrating but alluring enough to produce forward motion. Crawlers want interesting things to crawl on, such as unbreakable mirrors or pictures under sheets of Plexiglas on the floor. Texture mazes on the floor and up the first two feet of the wall are stimulating environments planned for infant and toddler motor development. Feeling a steady beat is a primary ability to basic motor skill development, so those games of "Patty Cake" and baby rumbas are planned curriculum activities in the HighScope curriculum (Weikart, 2009). Reading poetry, repeating fingerplays, and reading stories with repetitive lines provide verbal experiences with rhythm.

To encourage children's physical activity, Pica (2010) suggests the following:

- arranging the environment to allow for movement
- buying equipment and props with movement in mind
- demonstrating enthusiasm for physical activity
- helping children understand why movement is important

4-5 Physical Development and Play

Physical growth and development occurs most rapidly in the first two years of life. Infants are transformed from fixed, nonmobile beings to propelled world investigators in that short time. Exploratory play is the primary way of learning about their world. As infants

become more social, they interact with objects and other people in play. At first, play is a sensory manipulation. The infant reaches out and takes hold of a rattle or a toy, or grabs his father's nose. As the child's muscles eventually become coordinated through experience, he will discover that he can cause the toy to make a sound or can make someone smile. In an ever-increasing spiral of complex actions and reactions, the child's play repertoire expands. The child learns that play is pleasurable, self-motivating, not expected to produce a specific outcome, and requires the integration of several different skills to continue. This play is inborn in animals and humans. Playing is indelibly linked to social adjustment and improved physical condition.

As children mature, their physical ability to run, throw, catch, climb, and kick is often channeled into more formal kinds of play such as sports games with rules. Success in sports depends not only on physical ability but also on emotional stability, self-control, and social competence. Games for young children, however, should be those in which all children can find success, so there should be no competition. Traditional games such as Duck, Duck, Goose, where only one or two children are moving and the rest are observing, can be embarrassing and discouraging and should be eliminated from organized play. Cooperative games, not those with one winner and the rest losers, can help young children develop team spirit and encourage them to seek out game-playing for its intrinsic rewards. In addition, losing produces negative feelings that can affect emotional development (low self-esteem) and social development (promoting self over others).

Young children should be given every possible opportunity to build their physical skills. It is a misconception that children are just normally engaged in vigorous activity. When children three to five years old were observed in various preschool settings, they engaged in 4 to 10 minutes of moderate-to-vigorous physical activity per hour (Pate, 2004), falling far short of the recommended 120 minutes of physical activity a day, half of which should consist of structured activities. For older children, even in structured competitive games, those who need the most practice get the least amount of time to play. Children cannot develop their physical skills if they are on the sidelines. In *Active Start: A Statement of Physical Guidelines for Children Birth to Five Years*, 2e (NASPE, 2009), specific guidelines address the physical activity needs of children during the first five years. The book begins with the following position statement: "All children birth to age five should engage in daily physical activity that promotes movement skillfulness and foundations of health-related fitness." The NASPE guidelines recommend school-age children accumulate at least 60 minutes and up to several hours of physical activity per day, avoiding prolonged periods of inactivity, and recommended 159 minutes of instructional physical education per week throughout the school year. The guidelines from this association are outlined in Figure 4-11.

4-5a Observing Physical Development in Play

Watching children as they play and move gives the observer information and leads to knowledge and theories about the contributing factors for the following aspects of physical development:

height—parents' height

weight—nutrition, metabolism, television habits, family's physical fitness

movement—age, experiences, inherited capabilities, self-esteem, physical energy level, possible disabilities

Written observations provide documentation for comparisons over time to show progress. From observations, assessments may be made regarding the child's growth and development. Further evaluations may be recommended if assessments indicate results fall below the normal range.

Infants	Toddlers	Preschoolers	Early School Age
1. Daily activities dedicated to explore movement and environment	At least 30 minutes of structured physical activity daily	At least 60 minutes of structured physical activity daily	At least 60 minutes of age-appropriate physical activity daily
2. Settings encourage and stimulate moment experiences and active play for short periods several times a day	At least 60 minutes unstructured physical activity daily and not more than 60 minutes sedentary activity at a time except sleeping	At least 60 minutes unstructured physical activity daily and not more than 60 minutes sedentary activity at a time except sleeping	Moderate physical activity with most of the time being spent in activity that is intermittent in nature
3. Physical activity to promote skill development and movement	Opportunities to develop movement skills	Encouraged to develop competence in fundamental motor skills	Participate in several bouts of physical activity lasting 15 minutes or more
4. Environment meets or exceeds recommended safety standards for large-muscle activities	Indoor and outdoor areas that meet or exceed recommended safety standards for large-muscle activities	Indoor and outdoor areas that meet or exceed recommended safety standards for large-muscle activities	Participate each day in a variety of physical activities designed to achieve optimal health, wellness, fitness and performance benefit
5. Responsible individuals understand and provide structured and unstructured physical activity	Responsible individuals understand and provide structured and unstructured physical activity and movement experiences	Responsible individuals understand and provide structured and unstructured physical activity and movement experiences	Extended periods (2 hours or more) of inactivity are discouraged for children, especially during the day-time hours

FIGURE 4-11 ACTIVE START: A Statement of Physical Activity Guidelines for Children Birth to Five and Physical Activity for Children: A Statement of Guidelines for Children 5-12, 2nd ed. (2004)

Source: Adapted from Active Start: A Statement of Physical Activity Guidelines for Children Birth to Five Years.

It Happened to Me

"Pants"

I was observing my preschool children climbing on the climber in the classroom. One boy, taller and heavier than all the rest, had difficulty climbing the ladder. He would try and try. I thought perhaps it was that he just didn't know how, so I tried to talk him through it without lifting him up (I probably couldn't). He still couldn't do it. Then I looked closer. For one thing, his torso was long and his legs were short in proportion. Also, because he was heavy, in order to purchase pants to fit his waist the size was so large that the crotch was long, almost to his knees, with the cuffs folded up several times. Have you ever tried to climb a ladder with your knees tied together? That must be what it felt like. I had a little private conversation with his mother, and we thought about possible solutions: shorts or pants that stretch. It wasn't just the pants but his weight, body proportion, and lack of arm strength, but he wanted to climb so badly that he eventually was able to once the clothing barrier was solved. Again, it pays to watch closely, not just check off "No" to "Able to climb a ladder." *If this happened to you, how would you word the opening conversation with the parent?*

4-5b For Safety Maintenance

EXERCISE

Using a separate sheet of paper, list five safety features you would plan if you were designing a room for young children

The teacher closely observes children's physical activity for many purposes. It is the adult's responsibility to prepare a safe environment for children. Accidents occur frequently in the early years because of increased mobility, lack of coordination, inability to anticipate and avoid dangerous actions, and lack of supervision. The newly mobile infant requires crawling surfaces that are sanitary and free of ingestible objects. Beds and changing tables must have high sides, safety straps, and adult supervision. For the infant and toddler, surrounding equipment must have a stable base as the standing infant pulls himself up. He uses furniture for handles and stabilizers as he begins to walk around. Children are built to run and climb, motivated by curiosity and newfound physical skills. When running and climbing are seen as a form of active learning, physical coordination, and a source of self-esteem, modifications to the environment are made to provide for safe moving. Climbing on objects not meant to be climbed can be dangerous, so furniture must be secured. Other climbing experiences should be provided, within a manageable range of the child's climbing ability. A soft mat is placed underneath to cushion inevitable falls. Places should be provided for running or jumping in the classroom. Look at where children are running and climbing, and make it as safe as you can, altering the environment to eliminate the unsafe conditions. All stairways and doorways must be blocked from the little cruiser.

Safe Indoor Play. Lack of space is the reason many teachers give for not designating classroom space for a large muscle area. A climber and space to jump, tumble, and run require open, nonfurnished areas. A clear floor space of 50 square feet per child is the minimum needed for toddlers and preschoolers. Less usable space reduces gross motor activity and group play, and may increase aggression (American Academy of Pediatrics, 2011). The National Institute of Building Sciences includes safe, secure and healthy attributes of child development centers (2013).

This includes provisions and strategies to ensure that:

- children are not abused by adults in the center.
- people/personnel do not have uncontrolled access.
- there are adequate washing facilities.
- finishes are easily cleaned.
- attention is paid to good indoor air quality as well as to the use of daylighting, nontoxic building materials, and improved maintenance practices.
- equipment, furnishings, and finishes do not contain asbestos or lead.
- occupant safety and health is ensured.

In the physical environment, the adult ensures safety, provides opportunities, and gives support. The developing skill determines the environment and curriculum (Figure 4-12), which includes all the skill opportunities that have already been attained so they can be refined and practiced. New experiences are added to the old.

Safe Outdoor Play. Traffic, school, and work schedules, less play space, and even neighborhood dangers contribute to declining outdoor play. The benefits of outdoor play to physical development—as well as to sensory learning, appreciation of nature, and expending energy—are obvious, but families and teachers seem to give it less and less attention. The outdoor environment should also be considered to maximize development in all areas.

Crawlers and walkers need materials that are safe and soft for first crawling and walking efforts indoors and out (Photo 4-1). Carriage and stroller paths that pass interesting things to look at begin the infant's experience of the outdoors. Paths later can be used for

Skill	Environment
<i>Infants</i>	
Rhythmic movement Crawling	Rocking chair, music Clean, cushioned surfaces to crawl on, under, through
Pulling up/standing Walking, holding on (cruising) Walking alone	Stable furniture to hold furnishings placed close together Smooth, nonslip carpeted surface
Climbing	Low, padded plat- forms with padded surface beneath
Pushing, pulling, and lifting	Movable materials, tubs, wheeled toys
<i>Toddlers: Above, plus</i>	
Climbing	More challenging apparatus, three or four stairs with railing
Scooting	Wheeled toys
Running	Clear, carpeted area for running
Jumping Pushing, pulling, and lifting	Sturdy, low platforms Heavier, movable equipment
Throwing	Large, lightweight balls
<i>Preschoolers: Above, plus</i>	
Balancing	Climbing and balance apparatus
Pedaling	Tricycles, scooters
Hopping	Floor games and
Throwing and catching	Patterns Balls and beanbags, targets
Striking	Bats, rackets, foam balls, wiffle balls suspended from ceiling
<i>School-Agers: Above, plus</i>	
Dribbling and shooting	Basketballs, baskets, and court
Running races	Team games
Gymnastics	Padded surface, horse, and parallel bars
Dancing	Rhythmic group dancing

FIGURE 4-12 Developing skills determine the environment and curriculum.

toddling, walking, and wheeled toys. Gentle inclines provide climbing and rolling-down fun. A variety of natural materials such as grass, sand, wood, and smooth rocks provide sensory experiences in texture. Wind chimes, birdfeeders, and portable tape players provide hearing experiences. The area is enriched with a variety of toys for manipulation, pretend play, and construction. Even infants need outdoor play. An Outdoor Areas Checklist (Marotz, 2015) features criteria on surfaces, equipment, natural aspects, security, storage, safety, and educational usefulness (Figure 4-13).



PHOTO 4-1 Even the littlest ones need an enriched outdoor environment full of sights, sounds, and a variety of textures.

Preschoolers need the same type of equipment and surfaces as the younger children but more challenging and separate. They need climbing apparatus and balancing equipment. They need steep hills to climb and roll down, and movable construction materials. Riding toys, swings, and sports equipment such as balls, bats, nets, and ropes also facilitate physical development.

Environments for early school-age children should provide opportunities to develop noncompetitive activities such as dancing, tumbling, skating, swimming, and the supportive skills for sports such as running, throwing, and catching. In elementary school, recess is usually the one free-play time of the day when children can make choices. As children's opportunities for outdoor play are reduced by busy lives, neighborhood risks, and the culture of inactivity, the need for recess is greater. However, in the current climate of pressure for academic performance, recess

Outdoor Areas

- ☐ Play areas are located away from traffic, loud noises, and sources of chemical contamination.
- ☐ Play areas are located adjacent to the premises or within safe walking distance.
- ☐ Play areas are well drained; if rubber tires are used for play equipment, holes have been drilled to prevent standing water.
- ☐ Bathroom facilities and a drinking fountain are easily accessible.
- ☐ A variety of play surfaces, e.g., grass, concrete, sand are available; shade is provided.
- ☐ Play equipment is in good condition, e.g., no broken or rusty parts, missing pieces, splinters, sharp edges (no open "S" hooks or protruding bolts), frayed rope.
- ☐ Selection of play equipment is appropriate for children's ages.
- ☐ Soft ground covers approximately 12 inches in depth, are present under large climbing equipment; area free of sharp debris (glass, sticks).
- ☐ Large pieces of equipment are stable and anchored securely in the ground; finishes are non-toxic and intact.
- ☐ Equipment is placed sufficiently far apart to allow a smooth flow of traffic and adequate supervision; an appropriate safety zone is provided around equipment.
- ☐ Play areas are enclosed by a fence at least four feet high, with a gate and workable lock for children's security and safety.
- ☐ There are no poisonous plants, shrubs, or trees in the area.
- ☐ Chemicals, insecticides, paints, and gasoline products are stored in a locked cabinet.
- ☐ Grounds are maintained on a regular basis and are free of debris; grass is mowed; broken equipment is removed.
- ☐ Wading or swimming pools are always supervised; water is drained when not in use.

FIGURE 4-13 Outdoor Areas Checklist

Source: Adapted from Marotz, *Health, Safety and Nutrition for the Young Child*, 7E.

is sometimes sacrificed for remedial work or as a disciplinary measure. It is often the time when children are supervised by aides rather than their teachers. If teachers were on the playground, a great deal could be learned about children's physical and social behavior (O'Brien, 2003).

Mobility and coordination increase the risk of accidents. As independence grows from the onset of crawling onward, children have the urge to get things for themselves. Leaving an area, climbing into a cupboard or onto shelves, or attempting tasks beyond their capability and judgment present dangers. Toddlers and preschoolers need an environment with interesting things to do, opportunities to help themselves in learning centers, and adequate supervision for safety and to facilitate play. Then the potential for accidents can be reduced. However, the emphasis on safety should not be construed as a reason to eliminate challenging physical activities. It is through experiencing the thrill of reaching the top rung on a ladder, scaling to the top of a rock wall, or standing atop a large boulder that children gain confidence, both physically and psychologically.

EXERCISE

Use the Outdoor Areas Checklist to practice Checklist recording, and review the criteria for safe environments.

If you were designing a playground for infants, toddlers, preschoolers, or school-age children, what kinds of equipment and surfaces would it have?

4-5c Observing the Physical Development of Infants and Toddlers

Developmental assessments of infants and toddlers occurs routinely in health-care settings. Well-child visits give the health-care provider information on changes in height, weight, reflexes, and attainment of normal milestones of development. These assessments are considered screenings looking for indications outside the wide range of normal that warrant further evaluations. Some standard assessments are vision, hearing, and exposure to lead. These early assessments are not accurate as predictors of later performance, but are monitors of the child's well-being.

In an early childhood setting, babies' awake hours are filled with play, exploration, movement, and expressing feelings (precursors to language development). Observations can be made while the infant is moving freely in the environment, such as in the crib, on the floor, or in someone's arms. Once the infant has coordinated her small muscle skills, observe and record how she handles toys, food, and art materials as they are introduced and used. Use recording methods that preserve the details of what the child is playing with and, more importantly, how she is moving her body and hands. The Checklist records milestones in physical development, while other methods are more useful in describing the creeping, crawling, walking, grasping, clutching, letting go, and rolling, stacking, throwing.

For infants, body awareness, learning the names of parts of the body, and naming parts as they are washed and moved are the beginnings of the large muscle curriculum. Using the Developmental Assessment Checklist, the adult can see what the child has accomplished and continue to give her practice to refine that skill. If she can roll over, then she is frequently placed on the floor and coaxed, called, lured by a toy, or gently rocked to practice the rolling. She will be sitting up soon, so she can be propped in a sitting position several times a day for short periods to give her a new view. Moving to a beat is an important curriculum goal, so music, rhythmic instruments, singing, and dancing are planned daily.

4-5d Differences between the Physical Play of Girls and Boys

It is generally believed that men are stronger than women physiologically but that women have greater endurance. There are other differences seen very early in life. Male one-year-olds already spend more time in gross motor activities, while girls of that age spend more time in fine motor activities.

EXERCISE

Other than anatomically, in what ways do you think boys and girls differ?



PHOTO 4-2 Boys are more likely to engage in rough-and-tumble play.

EXERCISE

How does Photo 4-2 make you feel?
What would you do if you were the adult in charge?

The social treatment of girls and boys, regarding toys and movement, begins very early. It is virtually impossible to control for that factor. This makes it difficult to determine what indeed is genetic and what is learned. Many studies have shown gender differences in toy selection, adult interactions with girls and boys, fantasy play themes, and types of play (Photo 4-2). Boys were found to be more aggressive and more than three times more frequently labeled as having ADHD (Attention Deficit Hyperactivity Disorder; Bloom & Cohen, 2007) and girls more domestic, boys more physical and girls more verbal. The exact cause of those differences is still under debate.

Knowing what we know about boys' greater need for physical activity, the curriculum push-down has reduced the time children are spending in play-based learning. Barbarin (2010) points to this as a risk factor, especially for African American boys. Another factor may be that because early childhood care and education is a field with predominantly female personnel, their own genetic and social predispositions guide play expectations for girls and

boys. This subtle bias can be seen in the low priority for large muscle equipment and learning opportunities in early childhood environments both outdoors and especially inside, often relegating activities benefiting large muscle development to a certain time, usually in a gym or open area. Often, female personnel give quick responses and attempt to discourage rough-and-tumble play in the classroom because they fear injury

and are worried that the play will escalate into real fighting or will overstimulate and encourage the continuation of rowdy play (Carlson, 2011). The biases are not so subtle in comments such as "Boys don't cry" or "Young ladies don't do that." Rough-and-tumble play or play wrestling is more often not allowed, not addressed in policies, and yet is tolerated in moderation in classrooms because it is a frequently occurring behavior (Tannock, 2007).

Longitudinal studies have been done on rough-and-tumble play, defined as active physical running and wrestling accompanied by laughter rather than frowning and hitting (Pellegrini, 2006). Rough-and-tumble play is not about territories or possessions. Participants take turns as victim and victimizer.

Pellegrini's studies found that rough-and-tumble play was engaged in typically by boys who had high social skills. The studies contend that observation of rough-and-tumble play can be used as an indicator of social competence. Such play leads to games with rules, role taking, and problem solving. Father's involvement in preschool children's rough-and-tumble play at home played a factor in physical aggression and psychosocial adjustment in later years (Flanders, 2010). Rough-and-tumble play is not only a physical release but "may facilitate friendships and promote cooperative pro-social behaviors and attitudes" (Scott & Panksepp, 2003). A well-planned preschool classroom includes space, equipment, and floor covering so that large muscle, whole-body experiences can be managed safely. Some policies and rules for rough-and-tumble play may include no kicking, tagging with open hands only, no choking, keeping hands away from hair and head, and when smiles stop then play stops (Carlson, 2011).

● Home Visiting: Physical Development

A home educator, as a visitor in the home, does not have the ability to change the home environment in the same way that a classroom teacher does. However, home educators need to consider what kinds of learning environments and opportunities the child has, both in the home and outside of the home, and to be comfortable, when necessary, discussing options for strengthening the learning environment. Just as in a center, a child needs a safe space and materials to explore, experience, and develop within the home setting as well as adequate time "playing and exploring" outside of the home. Educators in home settings should be well versed on what resources can be accessed to expand opportunities for children and families, should the need arise.

4-5e Play in Nature

In thinking of outdoor play, there is a movement to provide children with experiences in nature beyond a planned playground, out where there are trees to climb, plants and insects to examine, and a connection with nature that leads to an appreciation of ecology and the natural world (Photo 4-3). Richard Louv, author of *Last Child in the Woods* (2010), coined the phrase **nature-deficit disorder**, attributing physical and behavioral problems to the lack of outdoor free play in natural surroundings. Children have three types of experiences with nature. Direct experiences involve actual physical contact with natural settings and nonhuman species. These are unplanned, spontaneous play in a backyard, a nearby forest, meadow, creek, or abandoned lot where plants and animals and their habitats can be explored. Indirect experiences are activities that are more programmed or planned, such as explorations of botanical gardens, zoos, aquariums, museums, and nature centers. Caring for pets or domesticated animals are also indirect experiences. Vicarious or symbolic experiences occur when nature is encountered in books, television, and films. Urban, suburban, and even rural children's experiences usually move from vicarious to indirect to planned as they get older. A study of children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) showed that children who regularly play in outdoor, natural settings were found to have milder symptoms than those who played indoors or in traditional outdoor playgrounds (Taylor & Kuo, 2011).

Erickson and Ernst (2011) reviewed the research on the benefits of daily nature play:

- **Health**—Increased levels of physical activity leading to better motor skills and increasing distance vision.
- **Smarter**—Variety and options in nature stimulate creative thinking, lengthen attention span, reduce stress, promotes higher cognitive function.
- **Feel better**—Increased feeling of well-being, lower levels of anxiety, strengthens social bonds.
- **Good for the earth**—Early experiences lead them to care about the natural world.

The Dimensions Educational Research Foundation is conducting research on the skills children develop through their regular interactions with the natural world, showing the value of comprehensive nature education for young children. Many schools, parks, and nature centers are creating Nature Explore Classrooms, where children and adults can explore nature as a part of children's daily learning. Nature Explore is a collaborative effort of the Arbor Day Foundation and Dimensions Foundation. Nature classroom designs include outdoor spaces for building, music and movement, climbing, gardening, messy materials, gathering, and nature art. They use natural materials in construction and for storage (Photo 4-4).

4-6 Helping All Children with Physical Development

Physical play is universal, but there are environmental and developmental factors that affect it. Grandparents reminisce about the days when they went out to play in the morning and only came in for lunch and when it got dark. They



PHOTO 4-3 Children need experiences with nature.

nature-deficit disorder
social alienation from spending time outdoors



PHOTO 4-4 Nature Classrooms Where Children and Adults Explore.

played in the streets or in the woods and no one gave it a second thought. Sometimes several generations, ages, and abilities all played a game outside together, choosing up sides, improvising equipment, and making their own rules. Today, many of the places where children live are not safe to be outside. Play has become a much more organized, adult-orchestrated, and sometimes expensive activity.

4-6a Culture and Play

The rising concern over childhood obesity has lead researchers to investigate how biological, environmental, and socio-cultural factors relate to play. One aspect of study is examining how culture affects young children's physical activity by looking at children in the home setting. *The Observational System for Recording Physical Activity in Children—Preschool* (OSRAC-P) by McIver and colleagues (2009) indicated that children were less active during indoor play interactions with family members. Other studies by Goodway and Smith (2005) and Farley et al. (2007) looked at African American and Latino families, where obesity rates are higher, and found these families had low levels of physical activities with their children and primarily sedentary lifestyles. Socio-cultural and physical environments (rural/urban) may also contribute to the differences. From Emma and Jarrett's (2010) analysis of the research, parent education, teacher education, and cultural beliefs related to physical activity will be the determining factors in improving young children's physical activity and health.

4-6b Children with Disabilities

Children with disabilities have been seen in the past using a medical model that focuses on the disability and what they cannot do. The social model ignored accessibility to buildings, education, and interpersonal capacity, relegating the disability as a minority population easily ignored. Fortunately, the affirmative model suggests that the disability is only a part of the person, not the whole (Kay, 2012). It calls us to look at the person for what they CAN do, rather than what they cannot. With young children, there is such great potential to develop and adapt that it is vitally important to assess the child's abilities so that the disability does not overshadow the ability.

When a screening indicates that further assessments should be conducted, the child is referred to a specialist who will do a more complete evaluation dictated by the screening outcome. Appropriate remediation and further recommendations are often to be carried out within a program with other children of the same age, but with some modifications to the program being made to accommodate the child. Adapting the environment and planning for exceptional children will build on the abilities they do have. The curriculum is adapted so they have the closest match to what the rest of the class is doing. This is what is known as the **least restrictive environment**. If the class is marching, the child in the wheelchair can be pushed along in the parade or beat the drum. The child with a hearing impairment can watch the beat being tapped out and feel the vibration of the drum. The child who does not speak can lead the band. The child who is visually impaired can play an instrument in one location. The child who speaks no English can move and play with everyone else.

Just as with any other child, the basis for planning the curriculum begins with the assessment of where the child is in that developmental area. More information is usually present about the area of disability—from family information, the child's file, and reports from helping professionals. The observer needs to attune to the areas other than the one affected. Sometimes there is a bias or an unconscious attitude that other developmental areas are similarly affected. That is not true. Other areas could be right at the age or stage level with other children. They could just as easily be advanced. Objective observation and recording, without bias concerning the disability, is important. Modifications to the environment for physically challenged children include paths for wheelchairs and raised water and sand play areas for accessibility. Children with visual impairments are provided tactile- and auditory-stimulation materials. A real garden provides gross motor exercise as it is dug, raked, and weeded; it also encourages science, language, and sensory pleasure.

least restrictive environment
educational placement of children with exceptional needs

The concept of **Universal Design for Learning (UDL)** is that the environment (physical, social, and curriculum) is planned to give ALL students access. It includes modifications to the physical environment, both indoors and outdoors, and strategies for multiple ways to experience and learn. The suggestions for classroom modifications for children with special needs listed below are just as applicable to all children.

For children with physical impairments, make modifications to the environment to match the disability.

Universal Design for Learning (UDL)
environments, materials
usable by everyone, including
those with disabilities

Visual

- Encourage the use of hearing and touch to explore the environment.
- Keep the pathways of the room wide and free of obstructions.
- Describe your actions as you do them.
- Use large labels or Braille, depending on range of visual disability.
- Provide many sensory and tactile materials in the room.
- Encourage sighted children to help if necessary, identify themselves when nearby, and explain what they are doing and how.

Physical Impairments

- Keep the pathways of the room wide and free of obstructions.
- Include non-locomotor activities in games and learning activities.
- Modify the classroom tools with large knobs or grips.
- Encourage other children to help when asked.
- Adapted from Gerecke and Weatherby (2001)

Physical development is maturational and based on genetics. All children develop under those influences that are also affected by nutrition and opportunity. Non-English-speaking children and children of diverse cultures are not different physically from others in the group. It may be in the communication of expectations with both groups that any difficulties arise. Modeling and acceptance will help all children feel the freedom to try physical activities.

Helping Professionals for Physical Development Concerns

If observation and assessment reveal a developmental lag, the family is consulted, following confirmation by others on the team. The family will be referred to their medical provider, such as the pediatrician or a specialist for an evaluation of the child's physical skills. Others who may become involved in evaluations of physical developmental lags follow:

occupational therapist—a specialist who evaluates activities of daily living (feeding or dressing themselves) and provides therapy for assisting in the mastery of these activities

neurologist—a physician who specializes in the diagnosis and treatment of disorders of the nervous system, treating symptoms of pain and motor impairments

physical therapist—a specialist who evaluates capabilities for standing, sitting, and ambulation and provides therapy for people who have problems with these functions

Sharing with Children and Families

Share the child's accomplishments with the family and the child, if appropriate. For example: "This week we are closely observing the children's muscle development and coordination. I noticed that Madeline can skip, walk downstairs using alternating feet, and balance on one leg for several seconds. Those are advanced skills for one not yet four years old," or "Frank, I noticed that you can cut with scissors with either your left hand or your right hand. Do you feel better with one hand or the other? Can you show me?"



The concept of **Universal Design for Learning (UDL)** is that the environment (physical, social, and curriculum) is planned to give ALL students access. It includes modifications to the physical environment, both indoors and outdoors, and strategies for multiple ways to experience and learn. The suggestions for classroom modifications for children with special needs listed below are just as applicable to all children.

For children with physical impairments, make modifications to the environment to match the disability.

Universal Design for Learning (UDL)

environments, materials usable by everyone, including those with disabilities

Visual

- Encourage the use of hearing and touch to explore the environment.
- Keep the pathways of the room wide and free of obstructions.
- Describe your actions as you do them.
- Use large labels or Braille, depending on range of visual disability.
- Provide many sensory and tactile materials in the room.
- Encourage sighted children to help if necessary, identify themselves when nearby, and explain what they are doing and how.

Physical Impairments

- Keep the pathways of the room wide and free of obstructions.
- Include non-locomotor activities in games and learning activities.
- Modify the classroom tools with large knobs or grips.
- Encourage other children to help when asked.
- Adapted from Gerecke and Weatherby (2001)

Physical development is maturational and based on genetics. All children develop under those influences that are also affected by nutrition and opportunity. Non-English-speaking children and children of diverse cultures are not different physically from others in the group. It may be in the communication of expectations with both groups that any difficulties arise. Modeling and acceptance will help all children feel the freedom to try physical activities.

Helping Professionals for Physical Development Concerns

If observation and assessment reveal a developmental lag, the family is consulted, following confirmation by others on the team. The family will be referred to their medical provider, such as the pediatrician or a specialist for an evaluation of the child's physical skills. Others who may become involved in evaluations of physical developmental lags follow:

occupational therapist—a specialist who evaluates activities of daily living (feeding or dressing themselves) and provides therapy for assisting in the mastery of these activities

neurologist—a physician who specializes in the diagnosis and treatment of disorders of the nervous system, treating symptoms of pain and motor impairments

physical therapist—a specialist who evaluates capabilities for standing, sitting, and ambulation and provides therapy for people who have problems with these functions

Sharing with Children and Families

Share the child's accomplishments with the family and the child, if appropriate. For example: "This week we are closely observing the children's muscle development and coordination. I noticed that Madeline can skip, walk downstairs using alternating feet, and balance on one leg for several seconds. Those are advanced skills for one not yet four years old," or "Frank, I noticed that you can cut with scissors with either your left hand or your right hand. Do you feel better with one hand or the other? Can you show me?"

Other Methods

Other Methods to Record Physical Development

- Class Log List
- Anecdotal/Running Record
- Media such as photographs or video recording

Plans: Chapter 4, Week 3

- Chapter 4 Plan Week 3 Part A: Complete a Checklist on Physical Development for each of the children in the class and note it on each Portfolio Evidence Sheet.
- Chapter 4 Plan Week 3 Part B: Observe and record an Anecdotal Recording of Physical Development for Group B and post on Portfolio Evidence Sheet.
- Chapter 4 Plan Week 3 Part C: Complete the following Reflective Journal Questions kept in a private file at home.

Physical activities in my daily routine include . . .
 In thinking about physical development, my own large muscle skills are . . .
 My small muscle skills are . . .
 I think I'm this way because . . .
 It's affected other areas of my life by . . .

Answers for Exercise on Page 78

1. O—The position is observable, and time is measured.
2. O—How the child picks up the object is observed.
3. I—Whether the child enjoys it or not is interpreted by observing behavior and forming a conclusion. If the criteria were "Pulls self up on furniture," it would be O.
4. I—What are most small muscle tasks? It is not clear what they are and if they are observed or not.
5. O—The length and width of board is a precise measurement, and action is observable.

6. I—The criterion is too broad. More accurate criteria would be "Can cut a straight line" or "Can cut a curved line."
7. I—The observer has much latitude in deciding if the movement is "graceful." An observable criterion is "Moves without bumping into objects in the room" or "Moves to rhythm of music."
8. I—Increasing from what? This is not measurable. An observable criterion is "Can suspend body weight on bars for 10 seconds" or "Can catch an 8-inch ball from 10 feet."
9. I—Judgment of the observer is recorded rather than observed behavior. An observable criterion is "Spends minutes on small muscle activity."
10. O—Position and time measurement is specific. This is an objective criterion.

Related Readings

- American Academy of Pediatrics. (2011). *Caring for our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care* (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics.
- Carlson, F. M. (2011). *Big Body Play: Why Boisterous, Vigorous and Very Physical Play Is Essential to Children's Development and Learning*. Washington, DC: National Association for the Education of Young Children.
- Cuppens, V., Rosenow, N., & Wike, J. (2007). *Learning with Nature Idea Book: Creating Nurturing Outdoor Spaces for Children*. Lincoln, NE: The National Arbor Day Foundation.
- Isbell, C., Isbell, R. (2007). *Sensory Integration: A Guide for Preschool Teachers*. Beltsville, MD: Gryphon House.
- Kalich, K., Bauer, D., & McPartlin, D. (2009). *Early Sprouts: Cultivating Healthy Food Choices in Young Children*. St. Paul, MN: Redleaf Press.
- Keeler, Rusty (2008). *Natural Playscapes: Creating Outdoor Play Environments for the Soul*. Redmond, WA: Exchange Press.
- Louv, R. (2005). *Last child in the Woods: Saving Our Children from Nature-Deficit Disorder*. New York: Workman.
- Lyman, P., Feierabend, J., & McNamara, D.M. (2008). *Move It 2!* DVD. Chicago, IL: GIA Publications.
- Pica, R. (2010). *Experiences in Movement and Music: Birth to Age 8* (4th ed.). Belmont, CA: Wadsworth/Cengage Learning.
- Sluss, D. J. (2015). *Supporting play in early childhood* (2015). Stamford, CT: Cengage Learning.