

ENVIRONMENTS FOR INFANTS AND TODDLERS*

Jean Paulsel, Ph.D., CFLE

Introduction

Hi, my name is Eva. In this course we're going to look at the child care environments where children spend a large portion of their day.

The environment plays a major role in children's development. External influences offer the brain intellectual, emotional, social, and physical experiences which strengthen the trillions of connections between brain cells that make learning possible (PITC, 2010). Well-planned physical environments are necessary to support developmentally appropriate practice in child care settings. It is important to remember that infants and toddlers cannot create or alter the space around them. While adults can move a chair, turn down the music, or turn off a light, infants and toddlers must rely on caregivers to create their environments.

Environments are actually a part of the curriculum. They facilitate physical, cognitive, and social emotional development in young children. As children spend more time in out-of-home care, these environments become increasingly more important. Spaces used by infants and toddlers need to be comfortable, warm, livable, inviting, and functional.

By the time you complete this course, you should be able to

- Understand the need for quality environments for infants and toddlers
- Describe factors that contribute to health and safety in the environment
- Discuss factors that contribute to comfort in the environment,
- Understand how proper environments contribute to the physical, cognitive, and social emotional growth of infants and toddlers, and
- Provide technical assistance to providers to help them create the best possible environments for the children in their care.

Security, Safety, and Health

Safety factors are, of course, the most important consideration in planning the environment. Texas Minimum Standards are very specific about providing a safe and healthy environment for young children. As a licensing professional, you spend a great deal of time making certain that the environments for young children are safe and promote good health. You have the opportunity to visit with caregivers about the importance of these issues, and to help them understand the underlying reasons behind the licensing requirements.

When environments are designed with safety in mind, children can move about freely and explore. Caregivers can then spend their time interacting with children, rather than spending all of their time monitoring children's safety. Safe environments include developmentally appropriate materials and plenty of uncluttered, unrestricted space for children to explore.

Health issues in the environment must also be considered. Later in this course, we will talk about things, such as lighting and ventilation, which can play a role in creating a healthy child care environment. Other health issues will be addressed during the portion of the course that deals with various areas of the child care environment. While the minimum standards do not mandate specific types of lighting and ventilation, they do require that child care centers maintain a healthy environment that is equipped with proper heating, lighting, and ventilation. When licensing professionals are aware of research supporting these and other requirements, they are better able to share background information and technical assistance with caregivers.

In the next few sections, we will discuss some important considerations related to security, safety and health.

Security

In all areas of life, we have become increasingly aware of the need for security. A child care setting certainly must have solid security policies and practices in place. These policies and practices must protect against intruders, make certain that there are no hazards present in the facility, protect from outside elements, and contain a plan for emergency situations. Entrances and exits, bathrooms, hallways, and outdoor play areas need to be easily supervised as long as children are in the facility. Many of these issues are addressed within regular, required inspections from licensing staff and from other city or county entities. In your work as a licensing professional, you will have the opportunity to provide technical assistance to assist providers when dealing with any security issues so that child care facilities can be as secure as possible.

In our advanced electronic age, caregivers also have the opportunity to add security devices to their program facilities. Minimum standards do not require either video or audio surveillance equipment, but some facilities are equipped with video cameras, both to protect children and staff, and to allow parents to observe their children during the day. There can be keypad or control card devices on facility entrances that only allow authorized persons to enter. Electronic locks may be appropriate for some doors, as long as they meet local safety codes.

At the very least, there should a standardized way for children to be signed in and out of each facility. There should be systems in place to make certain that only authorized persons can pick up a child. All of these things should be clearly stated in the policies of the facility, and all staff should be familiar with them. Licensing professionals can help caregivers understand the importance of having standardized, secure methods of signing children in and out of care.

Room design, furniture placement, and the division and definition of space are all security issues to some extent, though they can also serve other purposes that we will talk about later in this

course. Understanding these issues will allow licensing professionals to offer suggestions to caregivers as needed.

Safety and Health

Very young children are active and curious, so safety is a primary concern. It is important that adults constantly survey the environment for small items that could be placed in the mouth. Toys must be examined to make certain that there are no loose parts that could be swallowed or present a choking hazard. Unused electrical outlets must be covered, and drapery cords should be concealed and out of childrens' reach. Great care should be taken when caregivers place children in high chairs and other seating equipment. Straps should be used according to directions. All materials and furnishings should be made of non-toxic materials, and choking hazards should be eliminated.

A clean, healthy setting helps to minimize the spread of germs and increases children's feelings of trust, security, and well-being. Caregivers should observe children for signs of illness and contact parents if necessary. Toys that are shared should be regularly washed and disinfected according to state standards. Hand washing is crucial to prevent the spread of germs, and caregivers must carefully follow all licensing requirements related to hand washing.

Supervision is also a critical component of a safe, healthy environment. As one group of researchers stated, "The key to infant health and safety is a knowledgeable, ever-observant caregiver. Caregivers should arrange the room so that they can see all areas and adequately supervise infants at all times." (Moore and Jacobson, 2002)

Comfort and Convenience

Many children spend a great deal of their childhood in child care settings. For this reason, the aesthetics and comfort of the environment need to be considered. Beautiful environments help children feel cherished and welcomed each day. While there is much equipment and many materials required for young children, the space need not be cluttered and unappealing. In these next sections, we'll talk about some of the things that contribute to the comfort and convenience of a child care facility.

Lighting

The physical environment should be welcoming and nurturing. Natural lighting is very important for all human beings. Natural light is important to a healthy environment, and has been linked to neurotransmitters in the brain that affect mood (Holland, 2008). Extensive research on the effects of natural daylight and exposure to the changing light and rhythms of the day confirms it has positive benefits to both adults and children (Freeman, 2006). If at all possible, children should be able to see out windows. Windows located near the floor are valuable for light and for allowing children to have views of what is going on outside. Skylights are another excellent way

to bring in some natural light. If there is no natural light in the facility, daily outdoor play becomes even more important.

Artificial light is also used in child care settings. Research has shown that various types of light affect learning and behavior in different ways. Many centers are over-lit. Overly bright or overly intense lighting can cause children to become over-stimulated. Lighting that is too dim can contribute to depression or lethargy. Full-spectrum lighting, which most closely mimics natural light, is a good choice whenever possible. Caregivers can experiment with different types and intensity of bulbs, different types of lamps and fixtures, and cleaning the fixtures that are in place. Caregivers should not hesitate to change the lighting to accommodate for various weather or seasonal issues. Neutral colors on the walls can also increase reflectivity and lessen the need for artificial light.

Appropriate lighting should match the function of the area, meaning the tasks that will be performed there. Some areas, such as stairwells, need additional lighting for safety reasons. If some areas of a room seem to need more light, caregivers could consider using strategically placed fixtures such as clip-on lamps and track lighting to provide extra illumination. When possible, caregivers could use flexible lighting options, like dimmers, that can adjust the lighting throughout the day and make transitions, like naptime, smoother (Holland, 2008). Licensing professionals may be able to offer some technical assistance guide caregivers to appropriate resources when asked about these issues.

Minimum standards state that there must be a source of emergency lighting that is approved by the state or local fire marshal, or battery-powered lighting, available in each room used by children in case of electrical failure.

Licensing professionals can encourage caregivers to look at the lighting from the child's point of view. How does the light look from on or very near the floor?

Color

The color of a room can change the room's atmosphere the mood and behavior of children (Pytel, 2006). Neutral wall and ceiling colors are preferable in child care facilities, simply because there is a danger of over-stimulation if children are exposed to only bright colors for many hours a day. Because most of the materials in a child care facility are brightly colored already, neutral wall and ceiling colors can help moderate the effects of too much color. If licensing professionals are aware of these facts, they can be a valuable resource for caregivers who are asking for guidance in these areas.

Acoustics, Sound, and Noise

Children are instinctively drawn to listen all the sounds around them in order to survive, learn about the world, and develop language. Human beings are designed to detect changes in sound, but are not designed to survive a constant onslaught of it. When there is too much sound in an environment, a phenomenon known as noise pollution can occur.

Noise pollution is defined as unpleasant noise created by people or machines that can be annoying, distracting, intrusive, or physically painful. Think about the many sounds you are subjected to every day. Sounds heard outdoors can include cars, motorcycles, airplanes, the hum of electrical wires, voices, construction noises, sirens, road repair, and much more. Indoors, there is the constant hum of refrigerators, telephone sounds, people talking, running water, flushing toilets and many others.

Exposure to constant loud noises produces a perpetual “startle effect” in children and adults, leading to tensed muscles, fatigue, diminished reflex responsiveness, and proneness to accidents. Constant noise can also cause headaches, tension, neurological disorders, immune system deficiencies, inability to concentrate, hyperactivity, poor digestion, irritability, sleep problems, and reduced mental acuity. (Olds, 1999). The Centers for Disease Control and Prevention notes even more problems, such as stress and a general reduction in quality of life (CEHN, 1999). The World Health Organization states that children from noisier areas have heightened sympathetic arousal, as indicated by increased stress hormone levels, and elevated resting blood pressure (WHO, 1999). As you make licensing visits, be aware of the noise level. If appropriate, you may be able to share some of this research information with caregivers, which could encourage them to create environments with less noise.

Young children can actually suffer hearing loss when exposed to inappropriate or excessive sounds. High noise levels and long reverberation times have adverse effects on children who have not completed language acquisition. Unfamiliar or excessive sounds can also cause anxiety in young children. Research repeatedly confirms that children develop better concentration skills in a quiet environment. This is not to say that a child care setting should be perfectly quiet or that children should speak in only whispers. There is an acceptable level of sound in any child care setting. Noise pollution, though, is a serious issue.

Noise can produce a number of social and behavioral effects that go beyond irritability and annoyance. Noise above a volume of 80 decibels may reduce the frequency of children’s helping behaviors, such as children expressing empathy to others and helping them. It may also increase children’s aggressive behavior. There is particular concern that high-level continuous noise may increase the children’s susceptibility feelings of helplessness. In studies, stronger reactions have been observed when noise is accompanied by vibrations and contains low-frequency components, or when the noise contains impulses, such as with shooting noise (WHO, 1999).

On the other hand, familiar sounds such as soft voices, soothing singing, instrumental music, and the sounds of nature, such as birds singing outside, are often comforting and calming.

According to the Children’s Environmental Health Network, studies show that children who are exposed to noise pollution may:

- Experience reading delays,
- Learn to tune out not only noise, but also the voices, which can harm their development of reading and language skills,
- Have more difficulty understanding spoken language and distinguishing the sounds of speech when learning in a noisy environment, and

- Have higher resting blood pressure and higher stress levels.

What can providers do to reduce the noise level in child care facilities? Soft fabrics and rough textures in upholstery, walling hangings, and floor and ceiling coverings can help absorb sound. When appropriate, these ideas can be shared with caregivers, making certain that providers understand that these are not requirements.

Landscaping offers some wonderful opportunities to reduce noise levels as well, and it can also be used for adding pleasant, restful sounds and other pleasant sensory experiences for children. Solid fencing can help shield the facility from street noises. Bamboo, reeds, and tall grasses will make a wonderful sound in the breeze. Birdfeeders will encourage birds to bring their songs to the children. Moving water is a relaxing sound. Something as simple as a tabletop fountain can offer that sound. Again, these are simply ideas that can be shared with caregivers; these are not requirements.

Order and Cleanliness

Order and cleanliness are extremely important in a child care setting. While there are many items that are needed for safe, healthy, and developmentally appropriate care, it is important that they are stored in a way that will allow children to:

- Access the materials,
- Make choices,
- Keep the toys and materials in good repair, and
- Enjoy a child care experience free of chaos.

A clean and orderly environment helps children organize their own thoughts and activities. It also may be easier for parents to drop their children off in a place that appears well-cared for and peaceful. Licensing professionals can help caregivers understand the need for order and cleanliness.

Temperature, Humidity, and Ventilation

Minimum standards require adequate ventilation. While specifics are not stated in the standards, licensing professionals who understand the research and best practices can be a wonderful source of information for child care providers.

Children spend a great deal of time on the floor. Therefore, it is important to control temperature and avoid drafts. The Administration for Children and Families, or ACF, suggests the following guidelines for acceptable temperature and humidity, measured at three feet above the finished floor:

- 69.8 degrees Fahrenheit and 35 percent minimum relative humidity in the winter, and
- 75.2 to 78.8 degrees Fahrenheit and 50 percent maximum relative humidity in the summer.

Infants may be more comfortable at temperatures one to three degrees warmer than other children would prefer. Tamper-proof thermostats should be located nearer the floor, but out of the reach of children, to monitor the temperature at a child's level.

Ventilation also needs to be considered. ACF best practices for ventilation are as follows: "In addition to heating and cooling equipment, a humidifier or dehumidifier may be needed to meet suggested levels. Each space should be supplied with a minimum of 15 liters per second of outside air for each occupant to control odors. None of this air is to be returned to the rest of the building. To ensure comfort levels, the air motion in the occupied space should not exceed 8,000 millimeters per minute."

Operational windows may be required by code. Best practice dictates that a healthy environment is encouraged by ventilating rooms regularly with lots of fresh air. If possible, there should be screened windows that can be opened to allow fresh air into the facility. Live, non-toxic plants also increase the air quality in child care spaces.

Warm, Welcoming Spaces

Spaces for very young children should reflect the physical size of the children who will use the space. When children have furniture that fits them and decorations on their own eye-level, they quickly claim ownership of the space and become more relaxed and comfortable in the setting. Minimum standards require that all furniture and equipment be age-appropriate for the children using it.

The space should be a mixture of controlled open spaces for active play and smaller, quiet spaces where children can play alone or in very small groups. Multi-level spaces allow for climbing and let children see the world from other angles, including being eye-to-eye with caregivers.

Nature should be incorporated whenever possible. Children love fish tanks, terrariums, and other experiences involving animals. Caregivers must be certain to follow all licensing requirements concerning animals. Non-toxic plants could be added to the space to soften it, as well.

Easy-to-move furniture allows adults to respond to the current needs of the children, which change as they grow. Constant change is unsettling to infants and toddlers, but gradual change to meet children's needs allows for better learning.

Adult Space

It is easy to forget, sometimes, that adults must also be comfortable in the child care environment. As important as it is for children to have age-appropriate furniture, it is just as important to have adult-appropriate furnishings for the caregivers in the child care space. Pillows and back supports on the floor encourage adults to spend time on the floor with children. Changing tables need to be at comfortable heights for adults. Some facilities have steps that

toddlers can use to climb onto the changing tables. Adults need a restful, comfortable place away from children, in order to take breaks.

Parents' needs must also be considered. Parents should always feel welcome in the child care environment. Parents often have anxieties about leaving their children. A calm, happy entry space can help them feel more comfortable with the transition. This may also be a place for the program to display educational materials for parents. This area should contain places for caregivers to exchange messages with children's families. It is valuable to have a comfortable, private space with adult-sized furniture for consultations with parents in order to ease anxiety and protect privacy. When asked, licensing professionals can offer some of these suggestions for creating a welcoming atmosphere for parents.

Care in Child Care Homes and Foster Homes

Obviously, the environment will be different in a family child care home or in a foster home than in a child care center, as these are places that serve as everyday living areas for families. If there is not a separate child care room, portable storage units can help caregivers maintain the toys and materials that children need. Areas of the space can be divided by tape on the ground if there is not enough room to divide the space using furniture.

Now let's take a look at some of the elements that make up well-designed infant and toddler environments. This information can be useful for licensing staff in giving technical assistance to providers in all types of child care.

Specific Areas of the Environment

The environment in a child care facility is a large part of the curriculum. A child care space that is set up in an intentional and appropriate way supports children as they learn. It encourages them to explore. It allows for development in all three domains – physical, cognitive, and social emotional.

Space design is a security issue, a management issue, and an important part of creating the proper space for children to learn and grow. A well-designed space will allow the caregiver to always be aware of who is coming and going, will allow for supervision of all children by sight and sound at all times, and will encourage children to play and hone their skills.

Room and Furniture Arrangement

Proper furniture placement is a big part of allowing for supervision by sight and sound at all times. Best practice is to remove any furniture that creates a barrier to observation. Best practice also involves creating play spaces that can naturally limit the number of children involved in a particular activity. Careful furniture placement can separate quiet from noisy areas, wet from dry areas, and create traffic patterns to help control the way children move about the space. While

toddlers do need plenty of room to walk, it is important not to leave too large of an open pathway in an area used by toddlers. When children *can* run, they *will* run. Proper furniture placement can help eliminate boredom and help limit aggressive behavior.

It is important that distinct and well-defined areas be created by the furniture. When play areas are well-defined, children have the opportunity to choose the activities that interest them. Having choices also allows children the opportunity to make decisions and problem-solve. These things, in turn, foster independence in children and build self-confidence.

The arrangement of space for infants and toddlers is a very important part of the environment. Good furniture arrangement can make supervision easier and ease tensions. Some researchers (2002) offer these suggestions for arranging infant and toddler environments:

- Crib areas should be separated from the main play areas if possible, so that little distraction occurs while babies are sleeping,
- Adults must be able to see the babies while they are sleeping,
- The changing area must have a sink equipped with soap, paper towels, and the appropriate pump-spray disinfectant,
- The feeding area should be near a sink, preferably with a tiled floor for easy cleanup,
- Minimum standards require that cribs be far enough apart so that a child in one crib cannot touch a child in another, and
- There must be sufficient space for caregivers to walk and work between cribs.

The environment should also include:

- A large carpeted area for infant exploratory play,
- Individual cubbies for each child's personal items,
- Problem-solving toys that are easily accessible to the children to allow choices,
- Equipment for large muscle development, away from the main traffic flow areas,
- Space for individual children to play by themselves when they wish,
- Sturdy furniture for beginning walkers to pull up on or balance themselves, and
- Windows near the floor that allow children to see what is going on in the world around them. This is not a requirement, but if the facility can arrange it, it is an excellent choice for young children.

When children walk into an organized child care space that feels welcoming, their transition from home is made easier. One additional way caregivers can create this atmosphere is by placing pictures of children and their families near the door, which can be welcoming and reassuring.

Diapering and Toileting

Diapering and toileting should take place in designated areas, apart from the rest of the child care environment. Clothing, bedding, and diapers should be changed as soon as they are soiled. Hands should always be washed before and after diapering at the sink available for that purpose. The diapering table should be sanitized after each diapering, remembering that all sanitizing solutions

must be kept locked and out of the reach of children. Licensing professionals can ensure that all requirements are being met.

A mobile or interesting picture can be placed above the diapering area in order to give children something to look at during diapering. This item should be changed regularly to keep the interest level high.

Food Preparation

Food preparation also needs to be done in an area apart from play areas and food should always be prepared in compliance with licensing standards.

Babies up to the age of 6 months should always be held when being bottle fed. This is an important time for caregivers to connect with babies. Bonding behaviors, such as gazing into the infant's eyes, stroking the infant, and speaking softly will encourage babies to eat and help them create secure attachments. As infants become ready for solid foods, foods should be added in the order and amount prescribed by the child's family. Caregivers can encourage parents to seek medical advice on how much and what kinds of food to feed their babies.

Toddlers should be fed at tables and, whenever possible, adults should be engaged in conversations with them while they eat. It is helpful for adults to eat the same foods as the children. This modeling behavior will encourage children to eat a wide variety of healthy, nutritious foods.

Play Centers

Minimum standards require that toddlers have opportunities to develop large motor skills, small motor skills, social and emotional skills, thinking and sensory skills, and self-help skills. Toddler areas should have specific play areas for different types of play. At a minimum, best practices dictate that they should include the following:

- Dramatic play,
- Library or book center,
- Music,
- Manipulatives,
- Blocks,
- Art, and
- Sensory.

These are very similar to the types of play areas set up for preschoolers. However, the areas must have developmentally appropriate materials, and will have fewer items than those same areas would in an environment used by preschoolers. We will discuss these play areas in greater detail a little later in this course.

Infants should also have defined areas, but these areas are more about movement and the types of toys incorporated into the area.

Parent Communication

A well-defined entrance and exit area not only makes communication with parents easier, it allows children to begin to make the transition from home to child care and from child care back to home. Licensing professionals can offer suggestions to caregivers concerning parent communication. A comfortable, welcoming entrance helps ease separation anxiety for both parent and child. Both parent and child should feel eager to enter the child care setting and experience the day!

Outdoor Play Area

The outdoor play area is integral to the development of infants and toddlers. The minimum standards require that children play outdoors every day, weather permitting. Playgrounds should be exciting and inviting areas that allow for exploration and creativity. Outdoor play areas offer opportunities that cannot be recreated indoors. Taking children outdoors in strollers or other restrictive equipment is not the most effective outdoor play experience. Children need to directly experience the outdoors.

The trend in early childhood playgrounds is to use large, expensive commercial structures. While these can offer many opportunities for young children, caregivers should not overlook the many possibilities available in affordable, creative play areas. A good outdoor play area will take into consideration the development of the children who will play there.

A well-designed outdoor play area will encourage physical, cognitive, and social emotional development. When outdoor play areas are designed with these things in mind, the area will successfully draw children's attention. We will discuss specific ways this can be achieved a bit later in the course.

What should a playground do for infants and toddlers? One researcher breaks down the components of a functional outdoor space into four essential elements:

- Equipment and materials,
- Safety,
- Play value, and
- Management.

The equipment and materials that are appropriate for infants and toddlers are drastically different in size, scale, and purpose from those made for preschoolers. It is often a temptation for caregivers to attempt to use preschool equipment and spaces for younger children, but this should not be done. Licensing standards state that the design, scale, and location of the equipment must be appropriate for the body size and ability of the children using the equipment.

Licensing staff and caregivers should make certain that all outdoor equipment meets or exceeds licensing requirements.

Safety is always a primary consideration. In this case, safety refers to the quality and repair of the equipment and the adult supervision taking place. Equipment and materials must be sturdy, durable, well-constructed, and well-maintained. Children need limits and guidelines on how to use the materials. If the equipment and materials are appropriate for very young children, these limits will be self-evident. Adults must be vigilant in their supervision of children during outside play. Caregivers need to be one step ahead of the children, anticipating any accidents, and be ready to respond quickly when needed.

A successful playground is simple, but flexible and versatile. Storage is an important issue so that toys and equipment can be rotated as children's developmental needs change. Toddlers need various areas to walk and to use push and pull toys. Walking on various terrains and around obstacles will help them hone their walking skills.

Play areas should have natural elements. While not a requirement, natural elements enhance the outdoor play experience for young children. Think of your memories about play. Does your favorite memory include a large block of concrete? Or does it revolve around a tree, a path, or an area in which to dig, fill, and dump?

Playgrounds should also have play materials such as toys for pulling, pushing, and riding. Various sizes and types of balls are excellent outdoor toys. Many of the same types of toys used for indoor play are also appropriate outdoors. Outdoor play is a part of the daily curriculum and the play materials outdoors should support development.

Storage

Infants, toddlers, and adults need to be able to easily see, find, and access materials. Caregivers need to make sure the arrangement of equipment is clear and visible to all who use it. Materials should be grouped together logically. Since infants and toddlers cannot read labels, they take cues from the way each area is organized, as well as its atmosphere, to stimulate their interaction with the environment. Adequate storage allows for a clutter-free, well-organized space that is pleasant for children and adults alike.

Individualizing the Environment

Environments should be created for the children in care. Furnishings for infants and toddlers should be sized for the children who will use them. It is inappropriate to use furnishings designed for preschoolers in infant and toddler spaces. Making sure an environment is individualized requires caregivers to incorporate developmentally appropriate materials and experiences for children.

Developmentally Appropriate Materials

Everything from the height of a chair to the location of cubbies should be specifically designed for infants and toddlers. Pictures on the wall should be at toddler height, and there should be things of interest on the floor for the infants. This could be in the form of an interesting texture or pictures of children's families, covered with clear contact paper, on the floor.

The space should be appropriate for the children. Infants need to have room to crawl and explore. Toddlers need enough room to practice their new walking skills. Toddlers are still engaging in parallel play, so they enjoy having enough space to play *near* another child.

Materials must also be developmentally appropriate. While older children may play dress-up with fairly complicated clothing and accessories, young toddlers may only need some hats, small shawls, and handbags. Older toddlers can move up to garments with elastic waistbands or hook-and-loop fasteners and shoes that will fit on over their own shoes. Remember to include both men and women's clothing. Infants need toys that are safe to mouth within, or just outside of, their reach to encourage moving, pulling, grasping, and reaching.

Best practices states that pictures and items in the child care environment should be things that are related to the child's world. Dolls should reflect the diversity in the child care facility and community. Play food items should reflect the children's homes. Pictures should be of children's own families and images of real things in children's worlds, such as household animals and nature items.

Remember that for the environment to be developmentally appropriate, the current needs of each child must be taken into consideration. Furniture will need to be rearranged as children age. Toys and materials will need to be rotated to help children practice their newest skills.

Developmentally Appropriate Experiences

Managing the environment requires managing space. Managing space successfully means using group management techniques, including routines and schedules. When children are comfortable with the routines and experiences in child care, the day can flow smoothly. Schedules should include times for arrival and greeting, meals and snacks, indoor and outdoor play, sleeping or resting time, child-directed play, adult-directed play, self-help skills, such as toileting and washing hands, transitions from one activity to another, and departure time. Schedules should always take into consideration the needs of individual children as well as the needs of the group.

This highlights the need for individualized lesson plans. Children develop at various times and in varying ways. This is particularly true during infancy and toddlerhood. Developmentally appropriate experiences mean that the experiences are appropriate not only for a particular age, but for a particular child. This means that schedules, routines, and materials must be designed for to meet each child's needs. Time schedules should always reflect what is best for children, rather than what is most convenient for caregivers. Set times for diapering, toileting, eating, and sleeping may not fit the biological rhythms and needs of individual children. While each day

should have a planned routine and schedule, that schedule must be flexible enough to accommodate the children.

Environments Supporting Physical Development

Now let's take a look at some ways providers can use the child care environment to support infants' and toddlers' physical development. As we talk about these ideas, see if you can identify specific suggestions you'd like to share with the child care operations you work with.

Materials that Promote Physical Development

Certain materials are valuable particularly for supporting physical development. Infants learn by using their senses and through movement. Infants must have environments and toys that are safe and easy to explore, foster curiosity, encourage language and literacy, help with mastery of skills, and are responsive to individual needs. Infants should have materials that are of interest to them and that will encourage them to move and grasp. Rattles and small toys with handles help encourage infants to crawl and help them learn to reach, pull, and grab. Infants also need plenty of space for crawling and that space should contain some items that must be crawled around or over. These movements support both gross and fine motor development. As they become more mobile, infants will move toys from one hand to another and carry toys with them as they crawl.

Toddlers need space to practice their new walking skills. In addition to walking on level, carpeted areas, they need to practice walking on smooth surfaces, pebbles, grass, asphalt, up ramps, over impediments, and up climbing equipment.

Both infants and toddlers need interesting manipulatives which are large enough to not pose a choking hazard. These types of materials are valuable for fine motor development. Infants can use such manipulatives as:

- Assorted soft toys and blocks,
- Cloth, vinyl, and board books,
- Rattles, and,
- Non-breakable mirrors.

Toddlers can use all these and many other types of manipulatives. Manipulatives are also important for cognitive development, which is discussed in the next section.

Sensory tables can be used with sand, water, cornmeal, potting soil, and many other materials, depending on the age of the children. Small wading pools can be filled with materials, such as shredded paper, to allow older toddlers to "swim". Again, these materials must take into account the age and development of the children. Very young toddlers still mouth materials frequently, while older toddlers do not mouth as often.

Modeling dough, shaving cream, and finger paints give toddlers experiences with different textures. Some toddlers do not like to have messy fingers, though, and may be reluctant to try these activities. Sometimes they can be encouraged to join in, but they should not be forced to participate.

Toddlers enjoy experiencing many different textures. Caregivers can create “texture boards” that allow toddlers to experience fabric, carpet, fur, plastic, sandpaper, bubble wrap, netting, and various other textures.

Experiences that Promote Physical Development

Children must move in order to develop physically. Caregivers need to be certain that children have sufficient time to move and play outside of confined areas. Children who spend too much time in confined spaces can experience developmental delays.

The following video shows an infant engaged in tummy time, or a supervised time while the infant is awake during which he is placed on his stomach to play. Tummy time is a critical experience for infants because it helps build their back, shoulder, and neck muscles, which will eventually be required for them to become mobile.

[VIDEO: Tummy Time]

Experiences that Promote Physical Development, Continued

Motor development is an important part of toddler development. Movement is essential. For a toddler, being still is simply not possible, and caregivers need to be understanding of toddlers’ need to move. Movement should be limited for only very short amounts of time, such as diapering or meal times. Waiting for a turn or standing in line are tortuous for toddlers and are generally past their ability level. They will, however, use their attention spans to practice a skill, such as throwing, over and over. It is important that the environment support toddlers’ need to move and practice motor skills.

Environments Supporting Cognitive Development

Play allows children to expand their cognitive development. Children need a multitude of diverse, open-ended materials and toys that stimulate their imaginations and hone decision-making and problem-solving skills. Active, engaging play is the foundation for academic learning that will occur in later years. Parents often push for academic activities that are beyond the scope of the abilities of infants and toddlers. There are even parents who want their very young children to learn to read.

Licensing professionals should have facts on-hand to give caregivers to help them understand that play supports cognitive development and, therefore, academic learning in later years. Children need time to play, time to process and remember information, and exposure to new

concepts and subject matter content. Using their senses in a variety of ways will help them learn and retain this new information.

Passive activities, such as television and other activities that involve screens, do not promote brain growth. While information is being presented, children are not engaged in the learning process and, therefore, will retain little of the information. Standards state that children under the age of two should have no screen time and children up to the age of three should have no more than two hours of screen time per day.

Materials that Promote Cognitive Development

Toddlers are beginning to scribble. Writing materials, such as crayons and Manila paper, should be readily available to them. Paints, sidewalk chalk, and other writing materials are also valuable. Materials for open-ended play are vital. Examples of open-ended play materials are blocks, sand and water, dramatic play materials, musical instruments, and free-use art materials.

Art areas should include free-choice items that are readily available to the children. These open-ended experiences allow them to make choices and create whatever they desire. The end result is not the issue. Art is a process, not a product. Toddlers love to paint, and they can do this with brushes, but they can also do it with sponges, rags, dog toys, or other everyday items. They will enjoy using crayons and construction paper. Older toddlers can move into cutting and pasting, working with dough, and using various accessories. The art area should have a vinyl floor, if possible, and be located near a water source for easy cleanup

Filling and dumping containers is a favorite activity, and it teaches cause and effect, elements of physics, including volume and flow, and math principles. Because toddlers love this activity and will engage in it with fervor, it is in interest of organization and cleanliness for providers to limit the number of materials that are available for this purpose. Caregivers should teach clean up as part of this activity. Because toddlers love to help adults, this is an easy skill to incorporate very early.

Manipulatives are important for infants and toddlers alike. They allow children to learn such things as cause-and-effect, science properties, and math principles and to develop fine motor skills. Some of the manipulatives appropriate for toddlers are

- Shape-sorting games,
- Large stringing beads,
- Big pegs with peg boards,
- Simple puzzles, including puzzles with knobs,
- Interlocking beads,
- Stacking rings,
- Nesting toys, and
- Medium-size or large interlocking blocks.

Experiences that Promote Cognitive Development

Children learn best when they move. Play that is active helps the brain develop properly throughout early childhood. Very young children need play materials that are open-ended, rather than toys that have only one use. Open-ended play is important because it emphasizes the processes involved rather than the end product. Such play allows children to think, reason, make choices, and problem-solve. In fact, as children are engaged in open-ended play, they may actually come up with more than one “ending” for the play. This is an important problem-solving skill as children learn to measure the pros and cons of various situations.

Older toddlers can help with simple projects involving food that allow them to become aware of various tastes and smells. They can do such things as spread butter or mix batter. They can dip raw vegetables into dips and mash bananas. These activities help children develop self-help skills and pride in their abilities. Cooking activities often become a favorite of older toddlers. These types of self-help activities are not required, but licensing professionals may be able to help caregivers see the value of such activities.

The more senses that are involved in an activity, the more opportunities children have to move concepts from short-term memory to long-term memory. This does not mean that children should be bombarded with noises, scents, and visual stimulations. In fact, it seems that children create long-term learning better if they are allowed some time for various new pieces of information to “sink in.”

Older toddlers are beginning to use symbolic thinking. They are increasing their ability to use one object in place of another. While they still need realistic materials, caregivers can begin to provide more materials that offer a chance for imaginative play.

Toddlers will imitate behaviors that they see in everyday life. Materials that can support this type of play are blocks, dress up and imaginative play materials, and books. Caregivers can support this type of play by carefully watching children, and then adding props and interacting with children in their play. Language can be extended during these periods. For instance, if a child is playing “going to work”, the caregiver might say, “It certainly is a beautiful morning for going to work. Are you driving today or riding your bicycle?” or “Nurses work very hard taking care of people. Is your patient doing better today?” Open-ended questions allow children to hear more language and respond, which gives them a chance to use their imaginations and increase their vocabularies, as well as engage more deeply in the play scenario. Licensing professionals can encourage this type of conversation with children and, when appropriate, can model such behavior.

Children enjoy acting out what they see. While very young toddlers may only play with dolls or eat imaginary food, older toddlers will begin to imitate what goes on in their homes, at the grocery store, or at the doctor’s office. Adults can support this imaginary play by providing plenty of realistic props. Caregivers may see children acting out various emotional issues as they work through some of their own fears and anxieties.

Some experts believe that music increases the brain’s ability to learn. Music may alter children’s brain waves to make them more receptive to learning. It appears that music’s rhythm and

harmony might stimulate vital patterns in brain growth and neurological development. Because music evokes emotion, it can heighten emotional involvement in learning. Recorded music is great, but so is impromptu singing and music-making by children and adults alike. There should be simple musical instruments in the child care setting for toddlers to create their own music.

Toddlers are beginning to experiment with independence and it is an important skill for them to master. Caregivers should offer choices whenever possible, taking care that both of the choices is acceptable. For example, “Do you want to wear your coat?” is not an appropriate question if the weather requires a coat. On the other hand, “Would you like to put your coat on or shall I help you?” is an acceptable question for caregivers to ask children. Licensing staff can help caregivers work to achieve this type of language with children.

Toddlers enjoy being helpful and doing things on their own. Meal and snack times offer chances for children to feed themselves and practice using utensils. Toy shelves that are accessible will allow them to choose their own activities and put them away when finished. Minimum standards require that children have choices and toys that are readily available to them.

Literacy

The child care environment must be literacy rich, even for the youngest of children. For infants and toddlers, that means being cared for adults who encourage sounds and words, who provide activities that encourage young children to listen and speak, who actively read and share books with infants and toddlers, and who narrate the day in order to give children the vocabulary they need. Licensing staff can offer suggestions concerning literacy to caregivers.

Cloth and board books should be spread throughout the space to encourage children to explore them. In addition, there should be a library center with soft, inviting seating and many books. Some of the books can be homemade to reflect the families and cultures that are represented in the group of children.

According to one researcher, the essential components of early literacy instruction are

- Listening,
- Speaking,
- Vocabulary development,
- Concepts of books and print,
- Comprehension,
- Phonological awareness,
- Phonemic awareness, and
- Phonics.

For children from birth through the age of 3, there are specific activities that will support listening, speaking, and vocabulary development. Here are some things providers can do:

- Use eye contact when speaking with children,

- Engage in language rich activities, such as playing together and talking with each other while diapering, pouring juice, putting away toys, and eating meals,
- Read board books or wordless books with children sitting in a lap,
- Give children simple one- or two-step oral directions to respond to,
- Notice if children listen to stories with increasing attention and focus as they age,
- Ask older toddlers to repeat words and then sentences correctly,
- Play the name game by naming familiar objects, parts of the body, and other items,
- Name objects in the environment, and begin providing written labels for older toddlers,
- Expose children to books containing increasingly challenging vocabulary while keeping the books short and simple, without being tempted to use books with too many words,
- Select books with colorful and conceptual illustrations to talk about together, talk about the book, and extend the learning by expanding on what you have just read,
- Engage in meaningful dialog with children frequently, and
- Notice each child's use of new and expanded vocabulary to communicate ideas. This is an important stage of literacy development. Anecdotal notes can help the caregiver communicate with parents about emerging literacy. Licensing professionals can encourage caregivers to take such notes during the course of the day.

Young children also need to learn about books and printed material. Toddlers can begin to learn how to hold a book correctly, learn about turning pages, and begin to understand that English is read from top to bottom and left to right. Caregivers should talk about these things and point to words as they read.

When reading with infants, it is not necessary to read line for line. Caregivers can point to the pictures and tell the story in their own way. Caregivers should ask questions and relate the pictures to something that children already know, such as "This tree looks like the one outside." It isn't necessary to finish a book. It is more important for infants to remain interested. As they lose interest, adults should allow them to move on to another activity. Their attention spans will gradually increase and eventually, they will be able to listen through a complete book.

Phonological awareness is a broad term that includes phonemic awareness. Phonological awareness can be created by using rhyming games and various other types of word play. Phonemic awareness is the ability to hear, identify and manipulate the individual sounds in spoken words. Phonics refers to the relationship between sounds and letters in written language. Even the youngest children can begin to develop these building blocks by having music, rhymes, and silly-sounding words in their lives. These types of activities build the foundation for later learning and reading skills. There are other ways to encourage literacy, of course. These are just some ways to help caregivers get started.

As you make licensing visits, you can talk with caregivers about the many ways to increase literacy in infant and toddler care. The primary task of caregivers in this area is simply to impart a joy and love of reading and the spoken word. Literacy experiences of this type will encourage young children to learn more. Engaging activities that excite children will lead to success in reading and writing later in life.

Environments Supporting Social Emotional Development

Play concretely expresses what children are thinking and feeling. Their emotional investment in their play is serious and deep. It is their way of coping with the world around them and expressing whatever emotions they may be having. The end product of the play is less important than the process surrounding it. Play can tell providers what children are thinking and how they are coping with those thoughts. Play is also the way that children organize their own thoughts and feelings about various experiences. Caregivers who carefully observe children at play have an opportunity to learn important things about those children. Licensing professionals can give caregivers ideas on how to be careful observers, and how to use those observations in evaluating what children need in their individualized lesson plans. This allows caregivers to make certain that their expectations for children are clearly defined, and that they use this information as they create the lesson plans.

Independence

Toddlers who are securely attached and trusting will begin to express their independence. A well thought out environment can encourage this independence. For instance, cubbies with names and pictures will allow children to access their own items. If toys and materials are within reach of children, they can make their own choices about items for play. In addition, this set-up will allow caregivers to teach about taking care of materials and allow children to independently put their materials away. The physical space for toddlers should support exploration and encourage self-help skills and independence.

Adult Contact

Due to the nature of young children's developmental needs, adults are the primary aspect of the environment. It is critical that infants and toddlers have one-on-one, warm, responsive care. This concept guides the ratio of adults to children and the idea of continuity of care expressed in minimum standards. The smaller the group of children, the better it is for their development.

Rocking chairs are wonderful pieces of equipment that help adults provide warmth, comfort, and reassurance. Infants and toddlers need warm, responsive care and one-on-one time with important adults in their lives.

Adults should talk to babies as they work with them, using their names and explaining every action that the adult takes. For example, caregivers can say, "It's time to change your diaper, Joe. You'll feel much better after that." Adults can also narrate the activities and name things in the child's world, such as "It's time to put your shoe back on your foot. Can you help me put your foot into your shoe?"

Meals are also great times for social interactions with adults. Adults should ideally eat with the children and have conversations with them. Caregivers can name the foods, describe the textures

and temperatures, talk about the experiences of the day, and listen to whatever words the child may say. Meal and snack times are wonderful opportunities to develop close and respectful relationships.

Block Play

While block play certainly provides for fine muscle and cognitive development, it is also a wonderful social opportunity, and a chance to learn negotiation and conflict resolution. The block center should be available for free choice much of the day and can include many types of blocks, such as soft blocks, lightweight blocks of various shapes and colors, and large cardboard blocks. Accessories can add a great deal to block play. Such accessories could include containers to fill and dump, toy cars and trucks, plastic animals and people, and even small plastic plants or buildings. Blocks should be stored in an organized manner by type in open containers on sturdy shelves so that children can choose their own materials.

Bringing It All Together

During this training, we have focused on how the environment impacts the physical, cognitive, and social emotional development of children. Environment has many different aspects including room arrangement and set-up, furnishings and materials, and routines and schedules.

Environment is an important part of the curriculum for infants and toddlers. Here are the major messages we'd like you to keep in mind during your next inspection:

- Room arrangement impacts children's development and behavior,
- Health and safety are foremost factors in creating an appropriate environment,
- Materials must be developmentally appropriate and individualized for each child,
- The environment is part of the curriculum, and impacts growth and development in all domains: physical, cognitive, and social emotional, and
- Licensing professionals, given a solid research background, are able to offer suggestions and technical assistance to caregivers when appropriate to create the best possible environments for children.

Thank you for your attention, and for your commitment to ensuring that our most vulnerable children receive the best possible care.

References

- Ard, L. (2002). Chapter 1: Using space. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 9-13). Austin, TX: Texas association for the education of young children.
- Bergland, B., Lindvall, T., and Schwela, D. (eds.) (1999). *Guidelines for community noise*. World Health Organization. Geneva.
- Brown, P.S. and Frost, J. (2002). Chapter 3: Play and neuroscience. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 25-29). Austin, TX: Texas association for the education of young children.
- Diffily, D. (2002). Chapter 2: Arranging space. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 20 - 23). Austin, TX: Texas association for the education of young children.
- Freeman, D. (2006). *Advisory notice: Building*. Government of South Australia
- Head Start center guide: A guide for building a Head Start facility*. (2005). Arlington, VA: US Department of Health and Human Services. Administration for Children and Families. Administration on Children, Youth and Families. Head Start Bureau.
- Holland, M. Healthy child care: Health and safety for the young child. Noise and lighting in child care. April – May, 2008; Volume 11, Issue 3
- Infant and toddler spaces: Design for a quality classroom*. A collaboration between WestEd's Program for Infant/Toddler Care (PITC) and Community Playthings.
<http://www.communityplaythings.com/resources/articles/RoomPlanning/Spaces/InfantToddlerSpaces.pdf>. Retrieved March, 2011.
- Jacobs, P. (2002). Chapter 5: The essential playground – playing for keeps. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 41-47). Austin, TX: Texas association for the education of young children.
- Lally, R. and Stewart, J. (1988). *Visions for Infant/Toddler Care: Guidelines for Professional Caregiving*. Sacramento, CA: Department of Education.
- Learning in a Baby's World: Using the Mississippi Early Learning Guidelines; A Complete Curriculum for Infants and Toddlers*. Mississippi State, MS. Mississippi State University Early Childhood Institute.
- Moberg, K. (2002). Chapter 4: Literacy development and young children. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 33-40). Austin, TX: Texas association for the education of young children.

Moore, P.J. and Jacobson, A. (2002). Chapter 6: Infants. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 50-59). Austin, TX: Texas association for the education of young children.

Noise pollution. Healthy environments for child care and preschool settings. 2009. Children's Environmental Health Network www.cehn.org March 2009

Olds, A. (2000). *Child care design guide*. New York, NY: McGraw Hill Publishing.

Perry, B.D. (2000, November 1). *Put brain research to work in the classroom*. Scholastic Teacher Radio. http://teacher.scholastic.com/teacherradio/past_childdev.htm.

Pytel, B. Color and learning: How does color affect our thinking and feeling? August 8, 2006. <http://www.suite101.com/content/color-and-learning-a3246>.

Rogers, D. (2002). Chapter 7: Environments for toddlers. In Puckett, M. (Ed.), *Room to grow: How to create early childhood environments* (pp. 61-71). Austin, TX: Texas association for the education of young children.

Vogel, N. (1997). *Getting started: Materials and equipment for active learning preschools*. Ypsilanti, MI: High/Scope Educational Research Foundation.

*** This course was developed and produced by the Texas AgriLife Extension Service of the Texas A&M University System in cooperation with the Texas Department of Family and Protective Services, Child Care Licensing Division, and using funds provided under the American Recovery and Reinvestment Act of 2009.**