



Texas School for the Blind & Visually Impaired Outreach Programs

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Taking a Look at the FIELA Curriculum: 730 Learning Environments by Dr. Lilli Nielsen

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Abstract: This article is based on a book by Dr. Lilli Nielsen titled *The FIELA Curriculum: 730 Learning Environments* and lists the developmental behaviors in three-month increments as described in this book.

Key Words: Programming, visually impaired, blind, deafblind, Dr. Lilli Nielsen, Active Learning, developmental behaviors.

Many of the children who are congenitally blind with additional disabilities or deafblind have a great deal of difficulty learning because of their inability to access information in the environment the way a typically developing child does. Though they learn in similar ways, the learning process a typically developing child uses before the age of three may not be naturally accessible to the child with vision and hearing loss or motor impairments.

If you watch children under the age of three you see they are constantly moving in and through their environment, interacting with objects. They examine them by tasting, smelling, touching, listening and looking. Through this interaction they use muscles and develop coordination to sing, talk, eat, reach, grasp, lift, bang, shake, and throw. They learn about properties and concepts such as weight, temperature, textures, size, color, shape, and smell by comparing and contrasting the things they contact. Children at this age literally form the neural pathways that help them to see similarities and differences in objects, people, and experiences. This type of learning is the critical foundation of all future learning. Babies and toddlers are also developing emotionally at this age. Beginning with critical bonding to mom and dad, the baby quite naturally learns to accept and interact with an ever-expanding circle of people.

Many congenitally blind and deafblind children fail to develop these foundational concepts in the same way as a typical child because they cannot interact independently with their environments --- their world may only extend only as far as their hands or feet or mouth can touch. Early bonding may be jeopardized by hospitalization and medical treatments. Getting to people or even knowing that there are others around may not be easy. Many of these children continue to function at a very early stage of cognitive and emotional development even after their bodies have grown and they have become much older.

Dr. Lilli Nielsen talks about the importance of addressing the child's development in cognitive, physical and emotional areas. She offers strategies that work to advance the child's learning. I

recently reread her book, *The FIELA Curriculum: 730 Learning Environments*. In this book Dr. Nielsen describes behaviors for developmental levels from birth to 48 months (4 years) in three-month increments. When we are using an Active Learning approach to instruction, it is important to have a clear picture of each stage of development especially with children who are older than 4 chronologically but developmentally below the age of 4. Becoming a better observer of the child's behaviors helps guide material design, learning environments, and interaction strategies when utilizing Active Learning. Below is a list of various behaviors discussed in Dr. Nielsen's book. I would encourage parents and professionals to get a copy of this book for a more in-depth discussion of these behaviors and the adult's role in facilitating development of skills. Being familiar with these developmental behaviors is invaluable in utilizing an Active Learning approach.

Behaviors 0-3 Months

Movements become more and more intentional. Greater awareness of tactile, visual auditory, gustatory and olfactory experiences reinforced by repetition. It is the activities of the child's own body and with objects in his surroundings that form the basis for perception — needs rich environment that provides feedback.

Behaviors 3-6 Months

Developing finger strength and dexterity through scratching. Plays with his/her own fingers, interlacing and fiddling at midline. Wrist rotation also comes from playing with hands. Pushing objects to discover perceptual effects of auditory, tactile or visual nature. Grasping and letting go of objects and experimenting with various ways to grasp, and becoming able to choose the way that works best for a specific purpose. Grasping and keeping - combines ability to grasp with muscle strength to hold. Banging with clenched fists on surfaces and own head. Visually following objects swinging to and fro within reach. Acquiring control of head movements by lifting head and turning while in prone. Bracing feet against everything within reach of feet - builds muscle strength and haptic-perceptual skills to enable the child to bear the weight of his own body. Mouthing fingers and objects - helps to develop skills for eating, speech. Developing varied ways to signal people in his/her surroundings to express wants, needs, well-being, disappointment, pain. To be active in a prone position in preparation of learning to sit unsupported (support bench work typically).

Behaviors 6-9 Months

Rolling on the floor, struggling to stand on hands and knees, sitting and lying repeatedly in preparation to stand and balance. Moving an object from hand to hand. Banging with one hand on the object held in the other hand. Reaching for and letting go of objects. Picking objects up and repeating a series of actions. Using tongue, lips, and gums for exploring objects that continue to develop mouth motor skills - a prerequisite for putting food into the mouth. Banging on objects and surfaces with open hand - child's awareness of the effect he has enhances cognitive development. Using banging activity with an open or clenched hand to contact the person who is carrying him. Reaching towards another person or in other ways signaling that he wants to be held. Experimenting with using his voice in different ways and wanting to present the acquired skill to an adult without actually wanting to communicate. Achieving spatial

relations, first within reach in lying or sitting, later by crawling or shuffling around the surroundings. Crawling after the objects he has thrown out.

Behaviors 9-12 Months

Crawling around on the floor, pulling himself to standing and practicing balance. Walking sideways while holding on to sofa or table. Putting an index finger into all available holes and picking up crumbs - develops pincer grasp. Manipulating objects and sucking or biting everything he gets in his hand. Further development of wrist rotation through manipulating objects. Further development of mouth motor skills through sucking and biting objects. Expanding experiential base through expanded manipulation of objects. Banging on everything with some object in his/her hand (tool usage) Separating toys, pouring from containers, placing objects on specific spots (beginnings of constructive play). Experimenting with vocalization without actually wanting to communicate. Using newly acquired skill of babbling for communication. Achieving further understanding of spatial relations — first with objects in relationship to his body, and later by placing objects on certain spots within reach. Achieving further understanding of spatial relations as he develops the ability and desire to explore larger environments. Starting to play hiding games with objects — developing object permanence. Performing simple functions of daily living (taking off hat, putting food in mouth, etc.) — the child needs to have opportunities to use skills learned in games in daily living activities. Begins to respond to emotional attention and develops strong attachments to a few people from people he sees as meeting his needs. May begin to imitate adults with whom there is a strong emotional attachment and to play in an experimental way so he achieves object concept and commences to develop self-identification. May begin to show separation anxiety (rehearsing affective bonding) when not with a trusted adult.

Behaviors 12-15 Months

Crawling up onto sofas or big soft chairs. Walking. Eating using his/her fingers and a spoon alternatively. Drinking from a cup. Playing banging games with objects (banging on a variety of objects to compare with hands or an object). Banging with travel cane (allow some experimentation so the child learns what works best). Playing with big objects while sitting on the floor — this improves muscle strength, coordination of arm movements, enhances balance, improves concepts of size and weight. Building simple dens — he may build the den and immediately knock it down — develops important spatial relations and constructive play. Playing with quantities — rhythmic kicking, clapping, banging and vocalization patterns, putting multiple objects in one hand for banging games. Putting in and pouring from containers and placing objects next to and in front of oneself — builds understanding of quantities and relations between objects, concepts such as full, empty, too much, etc. Placing objects on top of each other — may start to try to stack, may place small object under larger one and immediately remove --- object permanence (Blind children seem to learn object permanence by placing object in a specific place, doing something else and finding it again.) Exploring, examining, comparing and discovering new ways to do familiar activities. Using one-word sentences for expressing wants and needs as well as achieving the concept of relationship between words and actions. Inviting the adult to play rough and tumble games. Drawing at the level of scribbling a few lines on each piece of paper — preliminary to learning to write and to illustrate the surroundings in two dimensions. Improving eye-hand coordination to fixate on activity child is

performing — looking at what he is doing. Child has established attachment to parents and key caregivers so he is not as anxious around strangers — he begins to show interest in other children but without making physical contact.

Behaviors 15-18 Months

Climbing up and down on sofas, climbing over obstacles and underneath furniture, and going up and down a few steps — achieving increasing gross motor control. Separating objects. Imitating adult's activities. Attempting to perform "putting together" activities using objects that do not require much accuracy (e.g., magnets on board). Using skills learned at earlier developmental levels in new ways — related to problem-solving and planning another activity. Listening intently to other children's crying or babbling, and maybe imitating sound, but not for the purpose of initiating play. Inviting parents or trusted caregivers and selectively inviting a stranger to participate in give-and-take games.

Behaviors 16-24 Months

Jumping on both sofa and hard materials, as well as walking up and down stairs. Pushing furniture and big boxes, pulling a cart or garden hose, lifting heavy objects. Moving objects around in the room or from one room to another. Placing objects behind cushions or open doors or big soft chairs. Building simple dens with chairs, rugs, sheets. Participating in domestic work. Planning the next activity by placing objects in different spots around the room — purposefully and determinedly moving from place to place. Undressing. Basic role-playing (feeding/drinking with doll, cooking, etc.) May perform movements that belong to a game. Exploring and experimenting — related to problem-solving. Sharing an experience with other people, as well as protesting about untimely interference or interruption of his/her activity. Moving towards another child — to watch, listen, touch, pull hair, hit, and poke.

Behaviors 24-30 Months

Running, jumping, walking, experimenting with balancing on one leg, walking on curbs, dancing with an adult --- may be surprised and afraid if he falls even though he is not necessarily hurt. Experimenting with numbers of items and with concepts such as full, empty, big, heavy, and color. Experimenting with scissors and crayons. Enjoying making himself dirty in a puddle or by using food or paint. Experimenting using a knife for cutting and spreading. Transferring to various daily living functions the skills achieved while playing such as pouring, washing dishes, dressing, etc. Very inquisitive --- will leave an activity to find out what made a sound or what someone else is doing. Playing with words, using short sentences while talking to self and others. Still shy with some strangers, but expands circle to include more familiar people. Sits and plays next to another child, occasionally imitating, but still very engrossed in own objects and activities. Becomes shy away from familiar surroundings or people. Has difficulty separating from parents or caregivers.

Behaviors 30-36 Months

Understands 50-70% of what he is told. Improving language by using an increasing number of words — knows he can make his/herself understood and will become frustrated if you do not understand. Improving gross motor skills by crawling up slopes, gym equipment, playground

equipment, riding tricycles, swinging, jumping, dancing, etc. Improving fine motor skills by putting small objects in small holes, model cars in model garage, making representational drawings (mom, dog, etc.). Can share available toys to some degree. More and more independent in daily living skills activities. Will become very angry with parents or caregivers if they try to help him do things he wants to do on his/her own. Has a need to share his/her experiences with an adult — the child must initiate the sharing.

Behaviors 36-42 Months

Experimenting with high speed while bicycling, swinging, running, kicking. Jumping on one foot. Experimenting with any tool he gets hold of such as hammer, saw, beater, scissors, tube of toothpaste, saltshaker, etc. Role-play using miniature cars, houses, people, animals. Building a new den every day, sometimes rebuilding it many times each day --- bringing toys and other belongings to the den. Still improving ability to talk — asks for names of things. Begins to understand instruction at three years of developmental age. Trusts most people — may follow or walk away with strangers who are nice to him.

Behaviors 42-48 Months

Using all skills learned previously while playing alone or with others. Beginning to understand there is a future — may not want to take down den but rather save it for tomorrow's activity. May furnish den more like his/her home. Plays with dolls, miniatures, cars, animals, etc. - often in a dramatic manner. Participates in group activities and playing with other children or adults. Busy throughout the day. Willing to follow simple instructions to complete task if not too long.

Reference:

Nielsen, Lilli, 1998. *The FIELA Curriculum: 730 Learning Environments*. SIKON, Copenhagen, Denmark.



Figure 1 IDEAs that Work logo.

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