

Eccles Early Childhood Lab School Observation

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March 7, 2018

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Background

Typical development of a four-year-old child involves a variety of gross and fine motor skills. These skills can be broken down into locomotion, postural control, reflexes, object manipulation, and reaching and grasping categories.

Locomotion includes athletic activities such as running, jumping and climbing. Four-year-olds are able to walk down stairs (one foot per step) and are capable of using roller skates and a small bicycle (Campbell, Palisano, Orsin, 2012). As for postural control, a four-year-old has the ability to accurately imitate arm position and complete three sit-ups. In the final category for gross motor skills from the Peabody Motor Development Chart, reflexes and object manipulation, children this age can bounce a ball and catch an object using both hands (Folio, Fewell, 2000).

Examples of a four-year-old's fine motor skills include lacing shoelaces, buttoning large buttons, and feeding themselves. Children this age enjoy crafts and are able to draw squares, cut shapes with scissors, fold paper, and color within lines. Four-year-olds are beginning to develop a mature pencil grasp (Folio, 2000).

According to the CDC, four-year-old children enjoy many games and activities that involve using both fine and gross motor skills. Examples include playing make-believe, dress-up games, simple card games, social play with other children, throwing and catching balls, singing and dancing activities, climbing obstacles, using exercise as play, and making crafts using materials like paper, pencils, crayons, scissors, and glue (CDC, 2017).

Methods

Study Design

Four students from the Salt Lake Community College Physical Therapist Assistant program visited the SLCC Eccles Early Childhood Education Lab School to observe the four-year-old classroom. Daily activities of the children were observed from 9:00-9:30 AM. Observers were specifically looking at the environment of the classroom and watching the children for gross and fine motor skills.

Sample Description and Participant Characteristics

Each of the four PTA students randomly selected a four-year-old child in a group of approximately 13 children who attend the Salt Lake Community College Eccles Early Childhood Education Lab School (SLCC-Eccles). Students observed the children during storytime and activity centers.

Environment

Safety

The children were supervised by 5-7 instructors during the observation time. The toys and games were age appropriate and safe for the children to use. The classroom had multiple large, open areas for children to move around and play without bumping into objects or each other. The children's bathroom may be a safety concern because the toilet can be easily viewed by an adult.

Physical Environment

Observation of the children took place during circle/story time in the classroom and also while children participated in activity centers of their choosing. The classroom was divided into

different sections, each with specific activities in mind. The floor was carpeted in the area where circle time took place and had enough room for each child to sit while an instructor lead the current activity. There was a wall in the area covered in brightly colored pictures to engage the children during the activity. Kids were able to place pictures on the wall that indicated what day it was and what the weather was like. Other pictures were hung that depicted other children who were of the same age acting out behaviors that the children were to mimic while participating in circle/reading time (folding arms, sitting down, smiling). The activities centers were set up in different areas of the classroom so each child knew what activities were to take place in that specific area. There were arts and crafts areas clearly marked with all the supplies able to be reached by the children. There were easels, paper, and other supplies that they could use that day were accessible. Other areas were divided into building, dramatic play, shapes tables, technology (iPad games), and sensory tables. Each table was set up for a specific activity that was to remain in each area. Toys were all age appropriate. All children, regardless of interest, had something they could do. Children were also given a cubby where belongings could be stored so the classroom wasn't cluttered.

Social Environment

In the social environment of the classroom, the teachers interacted on the children's level. Teachers sat in the small chairs or even on the ground with the children. They used age appropriate language with the children while they read the story. When a child had a question about the definition of a word from the story, the instructor used vocabulary that was easy for the child to understand. The instructor adjusted her voice to match the characters in the story to make it more interesting for the children. They kept the introductions of the teachers simple,

calling them, “Teacher” and then their first name. This made it easier for the children to remember names, and not have to worry about calling them Mr. or Mrs. and their last name.

Attitudinal Environment

The attitudinal environment was well structured. At center time, the children were provided options for which activity they wanted to participate in. Boundaries were set for specific activities. For example, the children were told to not change the iPad activity, though no clear consequences were verbalized at the time. When children were misbehaving or did not follow instructions, gentle reminders were given immediately such as, “I need you to use a calm body,” and, “Wait a minute for your turn.” The instructors remained positive while giving reminders. There were no opportunities to observe an instructor giving any other feedback,

Tests/Measures and Data Analysis

PTA students each observed a four-year-old child for 30 minutes. While observing, students looked for locomotion, postural control, and reach and grasp abilities. Students also noted the child’s persistence to task, the toys and activities they participated in, and the feedback the toys and activities provided for the child. All data collected is summarized in Table 1 below.

Results

Table 1: Data collected on four four-year-old children who were observed by the Physical Therapist Assistant student observers.

	Gross Motor Skills Observed	Fine Motor Skills Observed	Persistence to task in time	Toy/Activity	Feedback the toy/activity provides
Child A	<p>Locomotion Reciprocal arm and leg movement while running.</p> <p>Postural Control Imitated actions of instructor.</p>	<p>Object Manipulation Used mature pencil grasp while squeezing small bottle.</p> <p>Manipulated small connecting toys to make</p>	<p>Attention to current activity varied with interest.</p> <p>During storytime, child constantly changed positions and played</p>	<p>Following leader.</p> <p>Organizing colored marbles on paper with corresponding</p>	<p>Challenges auditory stimulation in motor coordination, balance.</p> <p>Child needed to be able to have a coordinated grasp of small objects and received</p>

	<p>Balanced on one leg for ~ 10 sec.</p> <p>Changed BOS multiple times and maintain balance in difficult BOS stance.</p>	<p>different shapes.</p> <p>Reach and Grasp Grasped small marbles with tips of all fingers and thumb.</p> <p>Lined up marbles in straight line.</p>	<p>with small stick.</p> <p>Child stayed with marble task 10 minutes and 5 minutes with connecting toys.</p>	<p>colored lines.</p> <p>Connecting/ Building toys</p>	<p>extrinsic visual feedback by matching color. Needed balance while standing and reaching across table.</p>
Child B	<p>Locomotion Marched with alternating feet and arms.</p> <p>Postural Control Stood on 1 foot for a few seconds.</p> <p>Accurately imitated actions (standing with clapping and tapping hands to lap, etc.) during follow the leader activity.</p> <p>Jump from 2 feet.</p> <p>Move from side to side (weight shift) on feet.</p> <p>Quadruped and reach with one hand.</p>	<p>Object Manipulation Draw a diamond shape with finger in shaving cream.</p> <p>Manipulate shaving cream.</p> <p>Manipulate action figure using mature pencil grasp for play.</p> <p>Open food coloring bottle and squeeze out contents using mature pencil grasp.</p> <p>Reach and Grasp Reach across the table and grasp food coloring bottles.</p> <p>Gather flowers and transfer from hand to hand.</p>	<p>Attentively listened to story time for about 10 minutes.</p> <p>During center time, moved from one activity to another frequently (only stayed with an activity for about 3 minutes).</p>	<p>Wrote in and played with shaving cream.</p> <p>Played with toys at water table.</p> <p>Gathered flowers.</p>	<p>Shaving cream provides sensory stimulation and opportunity to work on fine motor skills while manipulating and drawing.</p> <p>Playing at the water table provides the child and opportunity to practice balance while they reach and play with toys.</p> <p>The child needs balance to gather flowers from different heights and needs to anticipate postural control and reach and grasp to gather flowers of different sizes.</p>
Child C	<p>Locomotion Jumping Stomping</p> <p>Postural Control Raising hands Picking up a chair Tall kneeling Patting the teacher on the stomach (trying to get teacher's attention Ability to sit up tall and straight in chair</p>	<p>Object Manipulation Scrolling through iPad with fingers.</p> <p>Taking glasses on/off.</p> <p>Reach and Grasp Reaching for puzzle pieces and putting them together</p>	<p>Not very responsive to sitting still in story time.</p> <p>Stayed focused and on task with iPad activity.</p>	<p>Puzzle</p> <p>iPad-camera activity</p>	<p>Puzzle challenged their reach and grasp skills, as well as accuracy.</p> <p>iPad provided visual feedback that Child C enjoyed. They were intrigued by the different distortions the camera gave of their face and the environment around them. They used fine motor skills to manipulate the screen with their fingers.</p>
Child D	<p>Postural Control Accurately imitates arm and body position.</p> <p>Tall kneeling on floor.</p> <p>Quadruped.</p> <p>Downward dog position.</p>	<p>Object Manipulation Squeezing object between fingers and palm.</p> <p>Washes hands.</p> <p>Manipulates, connects, and lines up toys and marbles.</p> <p>Reach and Grasp Pincer grasp.</p>	<p>Child was distracted during story time and could only pay attention for ~1 min. before moving around and turning her attention to another teacher or classmate.</p> <p>Child focused on one activity for 5 min. before moving to a new task.</p>	<p>Shaving cream and food coloring.</p> <p>Organizing marbles by color.</p> <p>Connecting toys and building shapes.</p>	<p>Shaving cream activity challenged reach and grasp and provided sensory stimulation.</p> <p>Lining up marbles challenged grasp and the different colors provided visual stimulation.</p> <p>Connecting toys challenged grasp and object manipulation.</p>

Discussion

From the observation, we were able to recognize some parallels between previous research and the children we observed. We discovered common four-year-old abilities and interests from our research in the CDC and WHO articles. In the classroom, the children were moving around from station to station, working on different projects and crafts. This setting gave us more opportunities to observe fine motor skills such as a mature grasp and shape drawing. We did have the opportunity to observe a few gross motor skills such as leaping, standing on one foot, imitating actions of the teacher, and reciprocal arm movement. We also observed make-believe play, a common four-year-old activity. Some of these were tasks we specifically looked for after studying the development of 49 to 60-month-old children in the Peabody Motor Development Chart. We recognized that we were limited in the activities we could observe because of the small amount of time allotted. Also, we noted that because the children were only in the classroom while we observed them, it limited the number of gross motor activities that could be performed because of the small space.

All in all, the four-year-olds were a very pleasant group of children to be around. All of them were generally happy and engaged, even with different interests. Not all of the children were interested in story time, but for the most part, were able to sit still and listen. Once they were turned loose to choose what activities they wanted to participate in, they were very engaged and had no problem staying focused and on task, though some children were able to focus on a single task longer than others.

Clinical Implications

Prior to our visit to the four-year-old classroom, we had the opportunity to research what kinds of skills this age group is developing, what they like to do, and how their environment should look to promote learning and growth. This knowledge gave us a good idea of what to expect from the children. During our visit, we noticed that not all of the skills we had learned about were performed. Some children were more active and displayed more gross motor skills, while others were more quiet and focused on fine motor tasks. This does not mean that any of the children had developmental delays, rather, that each child enjoyed different activities and toys. Children develop at different rates and a child's interests will often dictate which skills they develop first. As physical therapist assistants, we need to be aware of what the normal milestones are for the children we will treat. We need to have realistic expectations for our patients and understand that each child is unique.

Physical therapist assistants also need to be aware of what kind of environment they need to set up for their pediatric patients. Children need an age-appropriate environment that provides opportunities for learning. The classroom we observed was fun, engaging, and met the child safety guidelines written by our PTA class. If the four-year-olds were in a classroom designed for ten-year-olds, the environment would be too challenging and the children would quickly become bored or frustrated. In the future, when we are working as PTAs, we will need to keep child development references on hand so that we can create an appropriate environment for our younger patients.

References

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