

Development of Motor Skills

I. Highlights

- A. Motor skills = controlling the muscles. Gross motor = big muscles. Fine motor = smaller muscles. Motor impairment = motor skills not fully developed, so children cannot use all of their muscles to the full typical ability.
- B. Poor motor skills can cause poor body awareness and low self-esteem.
- C. Lots of body/brain growth and change happens during the preschool years.
- D. Development follows a typical sequence: top to bottom, center outward, gross before fine, etc.
- E. It's not hard to adapt games/songs/activities to include children with motor challenges, but it does take practice and conscious effort. It's not something most of us are trained to do.
- F. Including children with disabilities in a mainstream class can be challenging at first, but deeply rewarding for everyone involved. The other kids learn as much from that child as that child does from the mainstream kids.

II. Homework

- A. Read Chapter 8 for next week.
- B. Internet assignment (see syllabus) due next week.
- C. Be thinking about that group project...

III. Discussion: Halloween

- A. A lot of government-funded programs do not celebrate holidays much anymore because some people don't celebrate. Private programs do whatever they want, but may call them different names (such as "Fall Festival" instead of "Halloween").

- B. Have to be very sensitive to the culture/community that we serve. If our school community is comfortable celebrating holidays, go for it. Be respectful of people who don't celebrate. Don't make them stay home, and don't make children feel "less than" because he doesn't have a costume. Let them make a mask in the art area or borrow something from the dress-up area so they can be included.
- C. If you have children who are frightened by scary images, be especially careful with Halloween. Celebrate with pumpkins and fun dress-up, not scary vampires and spiders.
- D. Holiday celebrations should be a limited part of the day, get parent volunteers to be in charge of it. Don't waste the whole school day or break the children's routines.
- E. Be aware that children will come tired and sugar-high the next day.
- F. Especially children with autism (and others who are sensitive) get weirded out by all this, even when it's fun. The decorations and projects and parties make them react, "What is all this? This doesn't belong here. This isn't normal. What's going on?"
- G. Can do tons of projects with pumpkins, not just jack-o-lanterns. Count pumpkins, bake them, do art with them, put them in the garden when you're done so they can see the decomposition process and the seeds can sprout next year.

IV. What is motor impairment?

- A. Means they cannot use motor skills (gross or fine) to the full typical ability because some part of motor development hasn't happened to the fullest.
- B. Shows in the way children sit, walk, run, use of hands, holding up head or trunk, etc. May be obvious/major, or only show up in certain activities.

- C. Motor skills = controlling of the muscles, whether overall or even blinking or swallowing
- D. Teachers need to observe and have good communication. Parents need to be aware and share with us.

V. What is the relationship between motor skills and body awareness and self-confidence?

- A. Motor skills are how they move their body, which is how they learn about their own capabilities and physics and their own presence in space.
- B. A child who is unable to control their body may be more prone to injury. Things we take for granted, such as going up stairs or walking on tanbark, may give them more ouch reports. Be aware of how our space affects them and what supports they need.
- C. When a child is bruised too much, that can raise our red flag about why they're getting all those injuries.
- D. Poor body awareness can cause poor awareness of personal space (not knowing where their body is in space), which can look like weird social skills and cause peer relation problems.
- E. Body image is how you feel about the way you look. Body awareness is about your body's capabilities.
- F. Self-confidence goes up if I'm an able, capable person, I know what to do with my body and I can use all my muscles the way I'm supposed to be using them. That raises my courage and drives me to keep learning more.
- G. Lack of body confidence/awareness (even without a disability) = the children who are usually watching others instead of joining in. They'll tell you, "I don't know how" or "I'm not big enough" or "I can't."

VI. PowerPoint: Physical Development in Early Childhood

A. Body Growth and Change in Preschool

1. Height increases 3 inches per year
2. Gain 5-7 pounds per year
3. Brain and head grow faster than the lower body parts (and head is the biggest part of the body already)
4. By 5 years old, brain has attained 90% of its adult size (if appropriate, stimulating environment and good nutrition, 5-year-olds are about 90% as capable as adults)
 - a) Frontal lobe = skilled movements, emotion, behavior, awareness, memory
(last part to fully develop)
 - b) Parietal lobe = body sensations
 - c) Occipital lobe = visual recognition, voice
 - d) Temporal lobe = smell, hearing
 - e) Cerebellum = balance and muscle coordination
5. Right hemisphere controls left side of the body, left hemisphere controls right side. Joined by corpus callosum (connects left hemisphere to right hemisphere). All wrapped in see-through skin like plastic wrap.

B. Vision

1. Visual maturity increases
2. "Fine motor skills" includes muscles of the eye. (Not just hands!)
3. "Lazy eye" is due to muscle underdevelopment around one eye
 - a) 10-minute surgery, and/or cloudy glasses or patch over good eye to force the lazy eye's muscles to get stronger
 - b) Can look cross-eyed
4. "Strabismus" is double-vision

C. Skeletal growth in preschoolers

1. Bones are soft, not brittle, haven't fully hardened
2. Some bones are still cartilage
3. Bones in the hand finish hardening at age 22
 - a) Nearly see-through x-ray at age 2.5, better at 6.5, more adult-like at 14.5 but still not adult
 - b) When the hand bones finish hardening, then you're done growing. It's not just when you stop getting taller.

D. Losing teeth

E. Gross motor skills

1. Muscles involved = all the big muscles (neck, trunk, legs, arms)
2. Infant who can't hold head up yet is because their neck muscles haven't developed yet.
3. Any movement or skill that requires moving those muscles = gross motor
4. Gross motor development
 - a) By 3 years old = hopping, jumping, running
 - b) By 4 years old = scramble over jungle gyms
 - c) By 5 years old = hair-raising stunts, jump off high landings
5. Gross motor activities
 - a) There are stages of learning to throw a ball (more coordinated as the child gets older)
 - b) There are stages of catching a ball (more coordinated + smaller ball as the child gets older because they can track it coming in (visual-motor coordination) and control their hands more precisely to catch it)
 - c) Bouncing a ball
 - d) Riding tricycles
 - e) Pushing and balancing on tire swing

- f) Climbing up the slide
 - g) Yes, accidents happen, sometimes quickly. Have to balance that with the value of risk-taking experience.
- F. Fine motor = hands, fingers, toes, face (eyes, mouth/tongue), bowel and urinary tract muscles (releasing and letting go)
- 1. Using fingers to pick up and manipulate objects
 - 2. Playdough, cutting, grating (cheese, potatoes, etc.), puppets, etc.
- G. Handedness
- 1. Left-handed people are 10% of the population, but 20% top scoring on the SAT. (Smart!)
 - 2. Always have to make accommodations for these children. Have scissors for both hands.
 - 3. Some cultures say left-handedness is a sign of not being smart or of evil curse.
 - 4. Sometimes learn to do some things right-handed even if they're left-handed.
- H. Sleep & sleep problems
- 1. Sleep is an important ingredient needed for full development of muscles and all other body systems
 - 2. Most children sleep through the night
 - 3. Helps preschoolers have a bedtime routine to calm down before sleep (calm environment, consistent routine)
 - 4. Good time to read stories to children.
 - 5. In 24 hours, different ages need different amounts of sleep:
 - a) Infants 14-18 hours
 - b) Toddlers 13 hours
 - c) Preschoolers 12 hours
 - d) School-age children 10 hours
 - e) Teenagers 9 hours

6. When didn't sleep well last night, may find it harder to focus, harder to control their own behaviors, harder to coordinate their movement, but also harder to fall asleep at nap or the next night
7. Transitional objects = objects children use as bedtime companions and away from home (teddy bear, etc. anything that comforts the child)
8. Nightmares/monsters = frightening dreams that awaken the child, usually toward early morning. Maybe under the bed or in the closet, hard for parents to handle this sometimes. Need to turn on the lights. Recognize that children believe there really are monsters. It's not helpful to just tell them to go back to sleep.
9. Night terrors = sudden arousal from sleep (often sit up), intense fear, increased heart beat and breathing, loud screams, no memory of event afterward. Maybe or maybe not open their eyes. Often night after night. Usually outgrown eventually.
10. Other sleep problems
 - a) Sleepwalking
 - b) Bedwetting (because so fully relaxed at night, boys more than girls, sometimes up to age 12 or 13)
 - c) "Curtain call syndrome" = needing just one more cup of water, one more book, keep asking parents to come back 4-5 times instead of sleeping
 - d) Sleep apnea

I. Nutrition

VII. Textbook Chapter 7

A. Sequence of development

1. Cephalocaudal = top to bottom
2. Proximo-distal = center (heart) outward

3. Mass-to-specific
 4. Gross-to-fine = gross motor development happens first
 5. Maximum-to-minimum
 6. Bilateral-to-unilateral = both sides, and then able to control one side at a time
 7. Orderly development
- B. If one hand is developed more strongly than the other, create activities that force them to use the weaker hand. Do something to keep the “good hand” still so they have to exercise the other hand to meet their needs or do their work.
1. Put stickers on the good hand and have them pick them off with the weaker hand.
 2. Place objects on their weaker side so they have to use that hand to reach. (Be aware of where you position the child and where the materials are. Maybe on the other side, maybe further away, so the child will have to exercise the weaker muscles.)
 3. Have them hold a bell with the strong hand and tell them not to jingle it.
Then have them do the hand motions or fingerplays with the weaker hand.
- C. Group activity: choose a preschool game or action song (such as Hokey Pokey or Duck Duck Goose) and identify modifications and supports you would use to facilitate participation of a preschooler with motor difficulties.
1. Head/shoulders/knees/toes with poor trunk control
 - a) Let all children sit in chairs, or give the child a back-support seat for the floor
 - b) Have a teacher sit behind them for support
 - c) Change body parts for what they can reach
 2. Red Light / Green Light with one leg shorter than the other
 - a) Use tricycles instead of running and put a block on one pedal to accommodate the leg length difference

3. Hokey Pokey for child with cerebral palsy
 - a) Allow children to take turns choosing body parts so the child can choose something that's comfortable for them to lead
 - b) Physical prompting (teacher sits next to them, touch the part for them to help them focus their attention on moving that part)
 - c) Give children dolls to move instead of their own body
 - d) Instead of putting your body part into the circle, try having them wiggle it or touch it
 - e) Positioning: Start with all children sitting in chairs or laying on the rug
 - f) Slow down the speed/tempo of the song
- D. Do you accommodate that child or the whole class?
 1. If a child has one leg shorter, only that child gets the block.
 2. If a child has poor trunk control, only that child needs a teacher sitting behind him for support.
 3. Children are smart. They know when a child has trouble moving, and won't feel left out that you're not sitting behind them helping them sit up.
 4. If a child needs to sit for the song, let everyone sit.
 5. All children are individuals with different needs. It's our job to meet them all. Some will need more help than others.

VIII.DVD: Educating Peter

- A. Peter has Down Syndrome, is entering a mainstream classroom on the first day of school in 3rd grade
- B. Some people believe inclusion is good. Others believe it will slow the progress of the other kids.
- C. First week of school

1. Teacher's role is to teach all children, feeling excited but scared too. Not sure if she can do this.
 2. Children said they were scared of his loud noises and looking different, thick glasses, baggy clothes, small shoes and small body
 3. Children asking why he's in their class, wondering if he can learn anything when he's rolling on the floor and knocking his chair over.
 4. Other boys are trying to take care of Peter when he misbehaves during group time. Help him pry his hands off the child he's pushing, say, "No Peter, I don't like that." Help the child who's getting hurt.
 5. When Peter takes the violin bow, teacher asks the child if Peter can hurt the bow. Has the child show Peter how to hold it correctly.
 6. Teacher guides the other children to let Peter do things for himself when the teacher asks him to.
 7. Another child is scared of Peter because he's pushing and kicking children, pulling their fingers back, licking them, no one knows how to handle him. Unpredictable behavior. Needs constant supervision, teacher constantly "on guard" around him.
- D. Teacher decided she needed help. Wanted her kids to have more ownership of their classroom and help deal with Peter's behaviors.
1. "Alex, if you tackled Peter back, what would he do?"
 2. Child: "I think he tackles people to get attention." Teacher guidance = give him positive attention for doing what he should (such as shooting baskets outside, whether or not he gets it in).
 3. Children notice he gets restless when we're waiting in line. Offer this insight to the teacher.
 4. Fewer outbursts in the 2nd month of school. Children getting better at guiding him.

5. Teacher has to hold herself back and not jump into a situation when the children are ready to take charge and solve it themselves. Didn't think third graders were capable of this much maturity.
 6. "Was that a nice thing to do? To jump on Andy? Did the boys and girls like that?" No. "Next time we do something in groups, I want you to stay in your group." Had him go apologize to the children in the group he interrupted.
- E. Mom said he came home from school and made his "happy sound" (like a motorboat) and smiling constantly for the first two weeks.
- F. 4th month of school
1. Sitting at circle at music time, playing along. Children giving him hints when he can't do it independently.
 2. Goal at start of the year wasn't academics. Was to make him part of the class. Reached that goal, then moved forward to see what else he can do.
 3. Made the child next to him his partner. Peter read the words and pictures, had his partner write the words for him.
 4. Teacher changed her expectation from "I'm not sure you can do these things" to "I'm expecting you to do these things because I know he can do it."
 5. Teacher saw that Peter sensed when the class was doing things beyond his skill set. Peter got frustrated, but she helped him redirect to his own work.
 6. Girls in the class have taken on the "mother role" -- naturally started sitting by Peter. Girls can start a conversation and keep it going. Help him get his food and cut it if needed.
- G. Sixth month: March
1. Peter understands the classroom routine, sits down and starts working.
 2. Now reading, gluing, pasting, running and catching in PE, etc.
- H. Seventh month: April

1. Still having a few outbursts, but usually at the end of the day when it was time to get on the bus and leave his friends.

I. Eighth month: May

1. Class cheering him on, "Peter! Peter! Peter!" while he ran the race.
2. Child saying, "He changed because we changed. He changed because we changed our minds about him. He changed because we helped him."
3. Child, "You think that you're teaching Peter things, but really Peter's teaching you things. We might be teaching him how to do things, but he's teaching us how to think and how to react to other problems."

J. Last day of school

1. Teacher: "My kids have learned reading and writing and numbers, but also more. They have learned to accept another child who's not exactly like them. He has a disability and is not going to have a future like theirs, but they want to include him in their classroom."
2. "He's been a joy for a friend."
3. "It doesn't matter who your friends are. Peter's one of my best friends now, and some normal people in my class aren't."
4. "I even get sad when I think about Peter not being in my class this year." Would go in a heartbeat to teach him again in 4th grade. At the start of the year, wasn't sure she could survive the week or the year, but now loves him.

K. Discussion

1. Karen's exact same story / scenario with a student with autism over three years. That difficult, but that rewarding in the end.
2. "We thought we were teaching him, but he was teaching us." "He changed because we changed how we thought about him." When a third grader can verbalize this and see another child this way, it's amazing. Inclusion gives them this opportunity.

3. Other children telling him, "No, this is not okay." instead of hitting back or instead of the teacher intervening. Gives the other children a voice to speak up for themselves in the future too when people are hurting them.
4. No, inclusion is not easy as a teacher. Help is necessary. Have a 1:1 if needed, have special teachers come help coach the rest of the class in how to handle it. We can all learn together along the way.