

CHILDREN'S HANDS TODAY (OR: CLASSROOM ACTIVITIES IN SUPPORT OF
HAND DEVELOPMENT) by Ingun Schneider 2/16 (edit 2/26)

When we look closer at children's hands as they use them in our classrooms today, we see many tense—even awkward—grasps on the pencil or crayon, one hand resting in the lap without holding the paper, and sometimes floppy hands that don't participate fully in whatever task is at hand. In previous articles I have explained how to support the development of the hands, from birth on. Here, I will bring aspects of this development that we can address in our classrooms from kindergarten through the grades.

The goal for my work with students—as I often explain to parents and teachers—is to further their development to the point where they are using the 'least amount of effort needed for the task at hand.' That translates to 'ease of learning'—in other words: the student definitely does have to use effort to learn and incorporate each new task/information, but not so much effort that they give up, feel stupid/incapable, get overly distracted/disinterested, and/or collapse at the end of the day.

The basic ability to 'gauge effort' has to do with proprioception (sense of self-movement) which is the main sense that builds the capacity we call 'body geography'—nowadays also referred to as 'embodiment.' This translates as the awareness each one of us has of the different parts of our body—from our feet and legs, to our trunk, arms and hands (and beyond). When we experience these different parts of our body in a full way, we have developed multiple connections between the billions of nerve cells that represent our physical body in the two hemispheres of the brain—in the so-called sensory and motor areas of the cortex.

The nerve receptors (proprioceptors) in our muscles, tendons and joint tissue are awakened and activated when we use the different parts of our body, thus contributing to the development of these connections. This translates to: 'the more varied our movement experiences are as we grow up, the more connections are made between the nerve cells in the cortex and the rest of our bodies.' One of my favorite Rudolf Steiner quotes highlights this process with other words:

From the course given in Ilkley, UK: [A Modern Art of Education](#), Lecture 3: "The development of the body is such that its functions are carried on as though unconsciously. It is only when faculties work unconsciously that they are right; they are reliable only when what I have to do is implanted into the dexterity of my hands and is accomplished of itself, without need for further reflection. When practice has become habit—then I have achieved securely what I have to achieve through my body."

We all know that the cortex areas for the right side of the body lie in the left hemisphere and vice versa. Any connections between the two hemispheres are made via the corpus callosum which consists of billions of myelinated nerve pathways. In order to maximize the number of nerve pathways between the two hemispheres, we need to repeatedly

use the right and left sides of our bodies in efficient and challenging ways—and we need to sleep between these moments of practice. (Matthew Walker, MD, author of Why We Sleep writes: “Practice and sleep make perfect.”)

That happens—among thousands of other examples—in the following ways:

—in infants as they lie flat on their backs allowing their hands to find each other, the mouth, and the feet (imagine all the nerve pathways being built between the different areas of the cortex and the body as these actions are repeated day-after-day over many months);

—in infants as they are allowed to pick up food and attempt to feed themselves (yes, that makes a mess);

—in infants as they are given the opportunity to creep on hands and knees for months on end (experience the pressure on your palms—rhythmically alternating between right and left—as you attempt to creep around for more than a short moment);

—up through the middle third of the first seven years as children alternate the use of their hands when digging in the sand, feeding themselves, and learning to button, zip, sew, finger-knit and so on. (NOTE: It is during this time that we adults have traditionally *invited* the child to use the right hand as the main actor with the left hand assisting);

—at least from age 5 when the child has developed a consistently used ‘doing’ and a ‘helping’ hand to manage the two-handed tasks of daily life—in the home, the classroom, play yard, garden, and everywhere else the child is active;

—in grade 1 and beyond when children learn to and practice playing the wooden flute, covering the holes on the instrument with fingers of both hands;

—in grade 4 when children in Waldorf schools learn to cross-stitch by sewing crossed embroidery threads over and over again (representing the multitude of pathways now crossing back and forth between the right and left hemispheres.)

In support of optimum development of this process of creating and myelinating (which translates as ‘insulating for more efficient transfer of information’) nerve pathways to, from and between the areas representing the hands in the two hemispheres, I would like to suggest the following for kindergarten and grades classrooms:

—Use and teach parents: ‘pressure massage’ the hands (and feet if there is time): the palms of both your hands press towards each other as your hands are wrapped around the child’s hand (beginning with the dominant hand)—gradually increase the pressure to tolerance, slowly decreasing again, repeat a few times as appreciated.

—Pretend to ‘put on gloves that are very tight’ (in the grades I call these the ‘writing gloves’ that they are to put on before picking up the crayon/pencil/pen to write or draw): Repeatedly use the fingers of the non-dominant hand to slide down firmly between the fingers of the dominant hand, ending up in the ‘valleys’ between the fingers: sliding the non-dominant fingers down while palms stroke against each other, then turn the dominant hand so the back of the hand is turned toward the non-dominant palm and fingers stroking downward in the same way as on the palm side. Repeat these strokes so the non-dominant hand receives the stroking. This stroking can go all the way down across the wrists and up the forearm a short distance (‘long handles on the gloves’).

—On a chair with the palms down, thumbs back, tuck the hands under the thighs; when the children are old enough they enjoy pressing down onto the hands until they hover over the chair seat ('chair push-downs-to-rise-up').

—'Finger tug-o-war': hook the index fingers together and pull apart with the elbows straight out to the sides (shoulders stay down, neck free), repeat with each set of fingers in turn; add, when ready: pull more with one side so the hooked fingers move slightly across the midline, then the other side.

—'Chain links': make two chain 'links' by firmly pressing the **tips** of both thumbs and index fingers together to make round circles, then link the two links together in order to pull them apart as if someone is pulling on the 'chain'; again, elbows are lifted out to the sides, shoulders are down and the eyes need to make sure that the links stay totally round (in other words, the tips of each thumb and finger are pressed together firmly).

—Palms together in front of chest at midline, elbows out, shoulders down: press palms together firmly for count of 5; release pressure slowly separating them; repeat pressure with palms moving gently back & forth across vertical midline a few times.

—'Mini rods': from copper coiling you can make little rods that are about the size of a new Lyra pencil (width and length): lay the coil in the sun until it is warm enough to straighten out and cut to size with a metal cutter, sand the cut edges smooth on rough sandpaper, then use in the following way in the grades classroom:

1. hold the rod vertically between the heel of one hand and all the fingertips of the other hand (index and middle fingers need to curl slightly in order to allow tip of little finger to reach to rod), holding it vertically, **slowly** roll the rod across the palm and fingers until the opposite heel of hand and finger tips are holding it firmly, carefully repeat a few times before gradually speeding up the rolling until the rod is rapidly being rolled between the palms only, then gradually slow down the rolling until again the finger tips and heels of hands are holding the rod at each turning point.

2. In separate handout: add making speech sounds along with this rolling; this is particularly helpful for children with difficulties remembering what sounds go with what symbols or for those with difficulties pronouncing some of the sounds of speech.

—Thumb Twirl Exercise from The Extra Lesson:

1. **tips** of right thumb and index finger press together to make 'a round well that doesn't leak any water', after about 3 seconds, pressure is released, the finger stays curled and the thumb 'turns into a ladle that scoops water out of the well': right thumb moves up inside the curled index finger, slides around its outside to come up inside from below a second and third time, now a second 3-second *pressing* of **tips** of right thumb and index finger into a round circle.

2. Repeat the same pressure with tips of thumb and middle finger making a round circle, then 'scoop water' out of this 'well' the same way for a total of 3 'scoops of water' ending with 'closing the well so no water leaks out.'

3. Continue the same way with right thumb and ring then little finger.

4. Repeat with left side remembering to first press the tips of the thumb and each finger together into a circle, then scooping water followed by pressing the well closed at the end of each scooping. NOTE: it is important to make sure (without having the student *feel* 'corrected') that each one performs this exercise in the correct way, including proper directions.

—More 'weight onto hands': besides the above activities to maximize proprioceptive (and tactile) input/awareness of the hands and fingers it is helpful to create pressure onto the full hands as often as possible (this recapitulates the pressure that infants experience when creeping around on hands and knees)—some suggestions:

1. Crab walking, wheel barrow walking (make sure the child's back stays firm and straight);
2. 'Swing throughs': flat hands on two desks near each other support the body as it first hangs then swings through between the desks;
3. 'Spider crawling up the wall': hands (fingers facing away from the wall) on the floor support the body as the feet slowly climb backwards up the wall;
4. 'Donkey kicks': hands flat on the chair, eyes watch the feet as the feet kick upward (knees bend); later hands on the floor and repeat same motions (watch that the feet stay safe from hitting anything/one);
5. When children are ready: handstands.

—Rudolf Steiner's suggestion to have children write with the foot (of the dominant hand side) when they have difficulties with handwriting works very well. I suggest foot writing as a weekly task from end of first grade through second grade, then less often in third grade. The goal would be to have each child write legibly in capital letters by the end of second grade, then legibly in cursive by the end of third—assuming cursive writing was introduced in second grade. The feet and the hands are connected, as many have experienced when trying to budge the Marbles-between-the-Toes and finding their fingers trying to help out.

Best is to repeatedly and regularly alternate between the above suggestions which are mainly for grades 1 and up. One can wonder why we have so many children with difficulties incarnating into their hands today.

Some of my speculations:

- Infants don't spend enough time on the floor.
- Infants are placed in front and backpacks too early and for too long. When hanging in a pack the hands have nothing to do, PLUS they are separated from each other (there goes the opportunity to integrate the vertical midline and developing bilateral integration as well..)
- Infants and toddlers need to be allowed to make messes as they figure out how to feed themselves efficiently.
- Young and older children need to use knives, scissors, graters and other kitchen tools regularly.
- Early childhood teachers (and parents!) have a fantastic opportunity to have 'helpers' use their hands to wash dishes and cloths/clothes, wring warm, differently textured and

soapy rags/cloths (can you feel, smell and experience these sensory inputs?), hang them on a line to dry and so much more!

—Children need daily tasks (they can be brief) in home and garden: mopping, sweeping, raking, digging, weeding, wringing rags/sponges, folding clothes, making beds; the list can go on!

Finally: when a child has difficulty coordinating the hands we need to also consider the neck and shoulder areas. The nerves that innervate the hands and fingers pass to and from the spinal column in the neck area, and when there is a structural imbalance in the spine, neck, and/or cranium there may not be much improvement in hand function until structural imbalances are treated through gentle cranio-sacral therapy—with a professional who works with children. Children with difficulty lifting the head up while lying on the back or with tense shoulders would benefit from having an evaluation with an expert in this therapy; Osteopaths are especially trained for giving this kind of care.



HOW TO HOLD A PENCIL:

Children's grasps on a crayon, pencil, paint brush, spoon, fork develop over the first seven years. Initially the main motions when drawing is directed from the shoulder, then the elbow, wrist, and finally the arm, including the forearm, wrist and hand can rest on the desk—with the help of ring and little fingers—while the thumb, index and middle fingers freely move the writing/drawing implement. This way the human hand's

longitudinal arch can develop—see photo! How many adults do we see who write from the wrist or elbow with all fingers working as a unit rather than having the ‘three adventurers’ (‘Thelma Thumb’, ‘Peter Pointer’ and ‘Leo Longman’) go out on their adventures while ‘Rita Ringman’ and ‘Sammy Small’ stay home because they like taking care of things in the home?

I teach all ages the following: hold out the writing hand in front with the palm facing you and the straight fingers horizontal. Now tap the ‘little shelf’ created by the middle finger with a pencil several times—to give some tactile and proprioceptive awareness to this ‘shelf.’ Next curl the fingers as if to hold a pencil, lay the pencil on the little shelf with the tips of pointer and thumb meeting at the top right above the shelf. The two ‘stay at home’ fingers rest together against the desk—well, only the little finger actually touches the paper’s surface. The ‘three adventurers’ can then freely manipulate the writing implement as it shapes letters, numbers, and other forms, See photos!

An important pedagogical aspect when teaching the ‘proper’ (=most efficient and physiologically sensible) way to hold the pencil is how to follow up after having given the above or another imagination/instruction. Children have been using a pencil/crayon for many years before they enter first grade, so here the teacher needs to assist the child in changing a habit—in itself a valuable challenge.

I observed one seasoned first grade teacher use an effective approach in support of those children in the class who kept forgetting the proper grasp: she had a ‘woodpecker friend sitting on her shoulder’ and, as she walked around the classroom, when the students were working in their main lesson books/papers, this ‘friend’ would ‘peck’ a few times on the desks of those students whose pencils were being held in inefficient/tense ways. This way, the teacher, without having to nag them, could remind those students who needed help remembering how to hold the pencil. For some children this ‘pecking’ may need to continue throughout first grade, even into second grade. These are most likely the students who need support beyond the classroom in order to experience their hands more fully via tactile and proprioceptive feedback—which contributes to full embodiment.