Lenses on Teacher Development [1]

Jeff Tunkey

Introduction

I consider myself very fortunate to have begun my explorations of anthroposophy and Waldorf education in the late 1980s, shortly after I turned 40. At that time, there were still teachers and lecturers in North America whom I would classify as being in the "second circle from the sun." That is, not part of the generation who were colleagues and associates of Rudolf Steiner, but among those who came along during the immediate period thereafter, i.e., beginning in the 1930s or 40s, and who had met some of the founding circle, or who had even been younger colleagues of those involved during Steiner's career. Leading lights I was blessed to hear talks by, or even meet a little, included Henry and Christy Barnes, Werner Glas, William Ward, Ann Pratt, and a few others now lost to (my) memory. Then, my early years of teaching at Aurora Waldorf School (AWS) near Buffalo, NY, would not have been possible without contact with and help from many in the "third circle from the sun" — master teachers still leading the schools movement in the 90s. One of these, with a pithy ten-word question, set me running on the path to what I hope has been a serious attempt at Waldorf teaching.

The Question

This highlight moment occurred during my Spacial Dynamics® training with Jaimen McMillan. One evening in a discussion circle, Jaimen posed to the group the following rhetorical question: "By what right do you call yourself a Waldorf Teacher?" The meaning, for me at least, was bracingly clear: Consider very carefully the responsibility of thinking oneself and representing oneself to be a Waldorf teacher.

Let's follow that along. What would Rudolf Steiner say—or do—if he were to walk into my classroom today? Cringe, grimace and have me hauled off to the Goetheanum, there to be dealt with by a squad of punitive eurythmists? How can I possibly know if I'm actually "doing Waldorf" a century after its founder passed from the scene, and in such a changed world? During his relatively brief life, Dr. Steiner gave some six thousand lectures, not all of which have been translated into English. His philosophy of the human being, his indications for education, were presented from many perspectives in hundreds of different lectures now collected in scores of different books that comprise the teachers' canon. And then, important pedagogical gems are also found here and there in the nooks and crannies of hundreds of other lectures on seemingly non-pedagogical topics. I do feel like I'm walking the winding yellow brick road seeking courage and a brain. By what right, I ask, may I call myself a Waldorf Teacher?

Teacher Trainings

As I began my teaching career, striving to create a cohesive program blending insights from gym program movement and remedial/student support, I decided to make myself a checklist of topics to keep studying and working to apply. I filled one book cabinet, and then a few more. Completing each book led me to add to, not shorten, my to-read list. After about 10 years of studying, attending workshops, and receiving a lot of mentoring, I noticed that sometimes the newer class teachers joining AWS from Waldorf teacher training institutes seemed less well versed in these foundational themes than those who had taken certificate courses in the past. This might be because—as the Waldorf movement evolves and passes from one generation to the next and the "circles from the sun" get wider—the orbit that teachers need to travel in order to gain understanding increases by a factor of pi or more. Perhaps some of Rudolf Steiner's core concepts are a little less likely to be passed through oral traditions, and more likely to be fractured by pressures on curriculum and tested results. Does this ring true to you?

In any event, I began getting requests to provide faculty meeting study guides at AWS, and workshops at other Waldorf schools. For AWS, I formed a monthly book study course, dubbed "A Scaffold for Waldorf Teaching." Each month for a year, participants completed a reading assignment; then we'd gather for five or six hours on a Saturday to discuss the topic and explore it through movement, speech, and artistic activities. I led three cycles of this course, and almost all of the teachers then at AWS attended it at least once. The balance of the chapters in this section will take up many of these foundations, and also provide some ways to find connections between these gifts from spiritual science and the findings of modern science.

1 This is an excerpt from the first chapter of Jeff Tunkey's book, *Educating for Balance and Resilience: Developmental Movement, Drawing, and Painting in Waldorf Education*, published by SteinerBooks/Bell Pond Books in 2020. The *Research Bulletin* is grateful to the author and to SteinerBooks for their kind permission to reprint this selection.

Conclusion

In a lecture titled "Facing Karma,"2 Rudolf Steiner suggested we should never lapse into a sort of basking in personal pleasure when success comes our way (as for instance when a teaching day goes blissfully well) but rather should remember to be thankful for the gifts of wisdom that passed through us. And, when things go less well and we feel discouraged, that we can find help outside of ourselves, through the One who walks along with us on our earthly journey.

Consider very carefully the responsibility of thinking oneself and representing oneself to be a Waldorf teacher.

All of the study items listed are not only interesting in the abstract; they are invaluable lenses for daily lesson planning, student observation, and self-evaluation. When a lesson or school day goes well, one can find ingredients of success in these staples of anthroposophy; when things go otherwise, invariably help for redeeming the next day can also be found by reflection on the list. Did I include laughter and tears? What was the quality of breathing in the room? Was there a student or students in shutdown mode? How was my posture?

A century after Rudolf Steiner began the Waldorf school movement, none of us can know for sure if our pedagogy and approaches would be what he might have intended. However, the world clearly needs Waldorf schools, so I believe we can all continue to provisionally claim to be Waldorf teachers so long as we keep striving to read and listen, and to discipline ourselves to place our self-evaluations in the light of the framework provided from the past.

Thus, in order to stand in front of students, parents and colleagues as a Waldorf educator, one must be willing to travel on a never-finished journey of research and self-understanding. Hold to the motto that every step forward with pedagogy requires two steps forward with personal development.

Practical and Ethical Considerations

The purpose of this chapter is to describe—and advocate for—a comprehensive spectrum of whole-class developmental strengthening; to outline approaches that can be added to movement program and individual support services your school may already offer.

In seating a student behind a desk, we as teachers and parents are anticipating that the child is physiologically and emotionally ready, or soon will become ready, for the academic progressions about to be presented. But realistically, every child will likely be at least somewhat challenged with some aspect of the academic environment: for myriads of individual reasons, each child every day will need a little help to thrive. Perhaps it might be a challenge to sit in balance, or to listen quietly, or to muster the fine motor skills for writing, etc. Thus, we must remember that through the gifts of developmental movement, drawing, and painting inspired by anthroposophy, every child can be more fully observed, and helped to reach his or her full potential.

The Basis for a School-Wide, All-Students Approach to Learning Foundations

To begin, let us look at two practical aspects of Waldorf education that by their nature will lead us to focus on related ethical considerations. By keeping these interrelated issues in focus, we can gain additional resolve for our Michaelic educational journey.

First, Waldorf academic paths are in some ways "slower" or in any event less test-driven than is common today. For writing and reading, we take the stance that parents can be patient, and not fret, if their child hasn't begun book reading in grade one, or two, or even three. For arithmetic, we are trying to be working, initially, to have the student "at home in the house of numbers" before emphasizing skill-and-drill computational learning.

Therefore, I believe, Waldorf schools have a heightened responsibility to observe carefully each child's developmental foundations and capacities. Yes, it is right to provide daily learning challenges, while still leaving early-grades students free to awaken to the intellect at a pace harmonious to each individual. However, it would obviously not be ethically upright for a school or teacher to wait until third grade (or later) 'for the light to go on', only then to find out that a student actually lacks the foundations; nor for a school to wait until there is a crisis brought by a parent or parents to begin filling in the developmental and assessment blanks. This book is about having a robust toolbox of student observation and support methods that can help teachers with this vital responsibility.

Threading the Needle of Class Constellations

A second set of practical considerations often facing Waldorf educators is one that can tend to lead parents

2 Vienna, February 8, 1912. Lecture 16 in *Esoteric Christianity and the Mission of Christian Rosenkreutz* (CW 130) (East Sussex, UK: Rudolf Steiner Press, 2001). Also in *Anthroposophy in Everyday Life.* Four Lectures by Rudolf Steiner (Hudson, NY: Anthroposophic Press/SteinerBooks, 1995).

and schools to meet each other at an intersection of weaknesses. This issue underscores the need for the types of approaches provided by this book.

Parents who begin investigating a switch to Waldorf when their child is in grade two or above are often seeking an answer to a question that in some regard they wish to avoid bringing all the way to the surface. Their child is struggling or even suffering in a current school, and they are seeking relief—but not (for instance) the bright light of a learning-disability label. And, very often, Waldorf schools struggle with enrollment and financial needs that leave them open to accepting an over-broad range of student and family profiles. The ethical consideration is multifaceted. Questions that can arise include: "If we accept this child, can we serve and educate him as well as or better than any of the alternatives? Have we objectively and realistically weighed the child's needs and our pedagogical abilities, or do we feel pressure to 'give it a try' and hope for the best? And, will accepting this student make it less possible for other students to learn?"

In order to stand in front of students, parents and colleagues as a Waldorf educator, one must be willing to travel on a never-finished journey of research and self-understanding

After many years of wrestling with this second practical/ethical issue, my school arrived at an approach that helps us keep it real. When there is an application for a new student in any grade, the process includes consideration of four qualitative questions:

1. Does the student have the will to work?
2. Does the student have the academic ability to progress with the curriculum?
3. Do the parents support the pedagogical values of Waldorf education?
4. Is the student likely to be a positive social addition to the class constellation?

Our rule of thumb is that positive answers to at least three of these questions will be needed in order for the student to thrive and for us to carry out our professional responsibility. These same four points of relationship evaluation may come up again at any time during a student's career at our school. Before addressing how these can be observed over time, here is an outline of our Educational Support Program.

School-Wide, All-Students

Observing children through Main Lesson, movement classes, in-services, recess, and subject classes can provide tremendous insight into the needs of students. It is through these classes and other modalities that the faculty can bring forth questions and recommend assessments for individual services based on the development of the child.

Aurora Waldorf School (founded in 1991) was very fortunate that in its formative years several of its teachers were able to immerse themselves in studying Extra Lesson with Mary Jo Oresti, Rachel Ross, and other leaders of the Waldorf remedial movement; and Spacial Dynamics with Jaimen McMillan and Maureen Curran. Thanks to the wealth of pedagogical insights these trainings provided and to the enthusiastic support of the AWS faculty up to the present, a unique program was created and has continued to be strengthened. My hope is that, in presenting the model we have followed, readers will find elements they can add or enhance at their schools.

A guiding principle that we gleaned from these trainings is: "All students need support!" That is, the movement, drawing and painting exercises found in *The Extra Lesson*[3] and other anthroposophic sources are not meant only for one-on-one use by struggling students who are provided individual help outside the classroom; rather, all students can benefit from doing them. For instance, many of the activities serve to align us with the currents of the Earth, and contain a harmonizing, focusing element… and who doesn't need that from time to time!

At AWS, resource allocations and personnel have shifted somewhat over the years, but the broad outlines have remained the same. The ingredients of our integrated 'full spectrum' program in the grades are:

1. Recess outdoors every day
2. At least two games/gym classes a week, plus one tumbling/gymnastics class (Middle school students have gym every day, for a total of 6 periods per week.)
3. An additional class called "Enrichment" in grades 1, 2 and 3; this provides whole-class time for Extra Lesson and developmental movement activities.
4. Two eurythmy classes per week
5. Classroom in-services: Extra Lesson teachers work with class teachers to model and mentor a core of whole-class remedial exercises, helping them add these to their repertoire of Main Lesson activities.

3 Audrey McAllen, *The Extra Lesson* (Hudson, NY: SteinerBooks, 2013).

6. Protocol for a progression of student assessments, including:
   - First grade readiness
   - Periodic in-class numeracy and reading screenings by the EST during grades 1 to 4
   - Second grade assessment (blend of "First Lesson" and "Dutch model"[4])
   - Standardized reading and math screenings in third and fourth grade
7. Individual student services provided:
   - Therapeutic eurythmy
   - Extra Lesson
   - Remedial reading
   - Remedial math
   - Assisted study hall
   - Referral for third-party services

Pullouts: Minuses or Pluses?

Individual or small-group services may take place on a weekly, biweekly, or daily basis depending on the needs of the child. Students are pulled out for sessions during all parts of the day: from the book-work portion of Main Lesson, an Extra Main, or a subject class (pullouts from movement and eurythmy classes are avoided). Schedule planning seeks to find the least-interruptive schedule based on each student's need. Naturally, no class or subject teacher would wish for any student to miss even one period, to have less of their subject — let alone to be away over an extended schedule. Nonetheless, teachers at AWS have come to accept over the years that students who need individual support are, in a manner of speaking, not actually "getting" their class, i.e., are not able to fully benefit until more concentrated help is given. And by focusing the majority of our remedial resources on the earlier grades, the need for pullouts has proven to be reduced by the time a student reaches the older, more academically-concentrated upper grades.

Learning is Movement, Movement is Learning

As noted before, a movement program that's solidly based on the developmental needs of children can have many school-wide benefits, including reduced need for remedial services, and reduced teacher burnout because classes are more ready for daily academics. At AWS, we have proven to ourselves that an extended program of play and movement strengthens the developmental foundations needed for success in the grades and beyond, and is complementary to the remedial program.

Two keys to the thinking behind this approach might be as follows. First, Rudolf Steiner indicated that our task as educators is to "teach the children to breathe." Perhaps for our modern times this might be better translated as "help the children learn to self-regulate." Secondly, Waldorf schools are supposed to provide—month after month and year after year—a progression of academic content for which the students are emotionally and physiologically ready, and which at the same time helps them take the next step.

Movement lessons can certainly make a contribution in both respects. Through age-appropriate movement, the developing human can gain basics like postural control, spatial orientation, movement coordination, the ability to change sight perception instantaneously between three-dimensional and two-dimensional space, good body geography, and confirmed dominance. Thus, each child can be helped in some way to reach his or her potential.

> Waldorf schools have a heightened responsibility to observe carefully each child's developmental foundations and capacities.

Again, our experience at AWS has shown that students are able to move ahead more solidly when they are all provided with appropriate daily movement and artistic activities; this is made possible by an embrace by class teachers of whole-class Extra Lesson and related exercises. Classes as a whole, and even individual students in the top academic tier, have through this dedicated effort shown strengthened foundations for literacy, numeracy, and deskwork capacities.

The Hierarchy of Learning Readiness

What Kind of Help is Needed?

Every new school year draws the student into what might be thought of as a "new civilization," and it bears repeating that every child will meet some individual barriers during the move to this new level of awareness of the world. Therefore, students will be best served by a curriculum that breathes in and out, flows between difficult new tasks on the one hand, and familiar, relaxing and supportive activities on the other. With this flow between analysis and synthesis, most pupils will be able to adjust to the new order of things, and they will progress.

4 McAllen, *The Extra Lesson*; Waldorf Schools of Holland Advisory Service, *Second Grade Development Observation and Assessment* (The Netherland: Mercurius, 1986).

However, some will require additional individual support before our hopes for them can become achievable. Very often, in one way or another, the child is the one who lets the adults know that more help is needed. (As teachers we may struggle to keep in mind that a "discipline problem" might well be just such a signal.) Whatever the signs that more help is needed, our role as adults is to thoughtfully and carefully decide what kind of individual attention is needed. Both common sense and careful contemplation tell us that there is a hierarchy of needs and support within which we must work.

> Have we objectively and realistically weighed the child's needs and our pedagogical abilities, or do we feel pressure to 'give it a try' and hope for the best?

The Realm of the Physician

Is there a medical/physical problem or a constitutional imbalance? No amount of individual attention from a teacher can fully help a child who has, for example, an undiagnosed vision or hearing problem, or an unknown food allergy that is driving her off the deep end. Research has shown a connection between iron deficiency and math challenges. Problems of this nature are the domain of the physician. Additionally, a child may have an excess of one temperament or another (i.e., the overly sanguine child who loses focus, or the highly phlegmatic child who can write only one page while the others are writing five, etc.). Teachers can work pedagogically with temperaments to a degree, but a pronounced constitutional problem is also in the domain of the physician, perhaps working in concert with a therapeutic eurythmist and/or a homeopathist.

The Realm of the Soul

Is the problem in the realm of the psyche? Is there a family crisis, or a struggle with parenting, or an educational psychological problem? The teacher can provide a calm and loving classroom, but needs in this realm will also demand outside professional help, and in some cases a specialized classroom or an Individual Educational Plan.

The Realm of Childhood Development

Is the problem developmental? Many aspects of learning readiness—for instance spatial orientation, movement coordination, and the ability to change sight perception between three-dimensional and two-dimensional space—are the results of the child's body/environment movement exploration during the first seven years. A developmental assessment or a Sensory Integration assessment can identify such things as retention of early reflexes or ambidexterity, lack of good body image, hypersensitivity or hyposensitivity, lack of spatial orientation, inability to make mental pictures of sense impressions, and dyslexic symptoms. Without solid developmental faculties, a child will struggle with any curriculum, Waldorf or otherwise. Needs in areas like these can be addressed through a team effort by the child's teachers plus individual attention for Extra Lesson or Occupational Therapy/Sensory Integration.

The Realm of Teaching and Tutoring

Is there a need for extra skill-building and skill repetition? Needs in this realm can also be addressed as a team effort, with additional individual attention in reading or math classes, plus tutoring.

Models for Observation and Reflection

In considering the needs or challenges of a child, it is important to try to form the clearest idea of which hierarchy or hierarchies might need to be addressed. These are:

Medical/Constitutional — the realm of the physician, as well as the therapeutic eurythmist and/or homeopathist guided by the physician.

Examples:

- Allergies or chemical imbalance
- Birth difficulties
- Injuries or illness
- Constitutional types
- Excess of temperament
- Heredity

Soul/Psyche — the realm of the parent, priest, or psychologist.

Examples:

- Home life
- Biography
- Diagnosis of learning disabilities. IQ testing, mainstream labels with deeper connections
- Birth order

Developmental/Pedagogical — the realm of the teacher.

Examples:

- Movement stages
- Twelve senses
- Six constitutional types
- Four temperaments
- Stretching and lifting

- Developmental keys: timing and rhythm; direction and goal; spatial orientation; sequencing; fine motor control and speech; midline barriers; imitation and anticipation; reflexes; radius and ulna; eye movement
- Family background of learning difficulties
- Learning style
- Home background for vocabulary, numeracy, will forces, etc.
- Breathing; laughter and tears
- Learning disability adaptations
- Laterality and dyslexia (*Laterality—i.e., the combination of eye, hand, foot, ear and brain dominant sides—and dyslexia have both a soul aspect and a developmental-pedagogical aspect.*

Working with the Twelve Senses

That humans have twelve senses, as presented in a variety of ways by Steiner a century ago, is often one of the first anthroposophic viewpoints that parents or others new to Waldorf will hear about. And if you're like many people for whom this was an informational starting point, you may have had a quizzical reaction when you heard someone state that humans have twelve senses, not just the six or seven commonly delineated by scientific textbooks (i.e., touch, sight, hearing, self-movement, taste, smell and balance). So, announcing that there are, as a fact, definitely a dozen senses might sound kind of "Waldorfy" at first blush.

But perhaps on this topic, as with many others, Steiner was ahead of his time, and modern science is just starting to catch up. For example, included in Steiner's model is what he termed a 'Life Sense,' the presence of an actual physical organ for sensing one's internal state of health and vitality. Off the beaten path? Or… pathfinding?

Well, a century later, the August 2018 issue of *Scientific American* magazine featured a lengthy and well-documented cover story titled "The Seventh Sense."[5] In that article, neuroscientist Jonathan Kipnis presented research that shines new light on the relationship between the nervous and immune systems: new findings that these two systems are not, as anatomy textbooks depict, isolated from each other. Rather, Kipnis stated: "Mounting evidence indicates that the brain and the immune system interact routinely, both in sickness and in health." The immune system may "qualify as a kind of surveillance organ that detects microorganisms in the body… and informs the brain about them, much as our eyes relay visual information and our ears transmit auditory signals." It will be fascinating to see how this new research is followed up in the future.

In any event, taking up Steiner's construct as a practical lens on the human organization can inspire fresh insights into the task of nurturing healthy childhood development and academic readiness. Those who want to explore the topic can find a wealth of reading, including books by Karl König,[6] Albert Soesman,[7] Gilbert Childs[8] and others. The following outline, given only for the purpose of keeping the main points in front of us, is a brief review of the twelve senses model that has been compiled from this rich background of sources.

The Basics

Rudolf Steiner defined the human physical body as an archetypal form that is the sum of all the senses working together.[9] Through our structural physical body, we can perceive three-dimensional space, gain uprightness, stand and walk, and carry our ego through life on the earth.

The twelve senses can be grouped into three tiers. The first group of four is commonly called the lower, foundational, physical or inner senses. It is through these four that the infant begins to find the way into the physical body and life on earth.

Touch Sense is the inner sense of "where I end and the outer world begins." Its development starts with the birth event itself. Touching any outer object changes one's inner state.

Life Sense is the sense of one's own health and inner condition. Examples: the heightened perception of one's inner state during running and then cooling down; feeling the nutritional difference between lightly steamed fresh vegetables and microwaved frozen vegetables. The mainstream term "homeostasis" refers to somewhat similar aspects of sensing.

Self-Movement Sense refers to the inner sense of one's own movements, both fine and gross motor; 'proprioception' is the equivalent mainstream term. This sense begins even before birth.

Balance Sense also begins before birth, as the mother moves around, reclines, etc., and then develops further as the infant rolls around, crawls, and learns to walk.

5 Jonathan Kipnis, "The Seventh Sense," *Scientific American,* Volume 319, Issue 2, August 2018.

6 Karl König, *The Human Soul* (Edinburgh, UK: Floris Books, 2006), and Karl König, *A Living Physiology* (Whitby, UK: Camphill Books, 1999).

7 Albert Soesman, *Our Twelve Senses* (Stroud, UK: Hawthorn Press, 2000).

8 Gilbert Childs, *5 + 7= 12 Senses: Rudolf Steiner's Contribution to the Psychology of Perception* (Stroud, UK: Fire Tree Press, 1996).

9 Rudolf Steiner, public lecture, Dec. 30, 1917. Typescript copy may be available from Rudolf Steiner Library.

Next, four middle senses are delineated. Also known as soul senses, they are at the boundary between the inner and outer world.

Smell and Taste senses are just as delineated in common parlance.

Sight Sense, in this paradigm, refers to the aspects of vision in which color, visual warmth, changes of scenery are perceived; sensing via the eyes also has a self-movement aspect, as our finest muscles move the eyes to focus and to process shapes.

Warmth Sense, distinct from touch, takes place at a wide margin between inner and outer (example: placing a very cold hand under lukewarm water). Dr. König points to the primacy of this sense in maintaining our balance between our inner and outer worlds.[10]

The four higher senses, also known as spiritual senses, connect us to the world of ideas and human interactions.

Hearing Sense — one of the twelve senses in common parlance.

Sense of Language or Word encompasses all that it is to sense and "be in" a language: hearing/perceiving the language, speaking and reading, etc. Language represents an amazing human achievement and is all the more astounding in that it develops in the first few years of life.

Concept or Thought Sense is the ability to perceive thoughts.

Ego Sense is the ability to sense another person's ego or presence (not the development of one's own ego). Example: sensing when another person has entered a room (perhaps a teacher with good classroom presence). It affects the ability to wait for a parent or teacher to explain an activity and to work in a group.

Connecting to Students

How can this theoretical model help us as teachers (and parents)? How can it be put into practice? I believe, in two ways: it offers an alternative—and effective—vantage point on modern labels for learning disabilities and is an important approach to self-evaluation of lessons and classroom management.

For each of four lower senses, which appear in the first days and grow throughout childhood, there is a companion higher sense that appears later in development, representing a transformation or flowering of the lower sense. Another way of saying "the lower senses develop the higher senses."

Quite a few learning difficulties—challenges including inabilities to pay attention or stay with the class, struggling to form or remember thoughts, hindrances with language or listening skills—appear to relate to one or more of the four higher sense categories and to call for tutoring or other direct intervention. But one can instead look at these challenges at the level of language, thought, or human attention as possible needs for help in the development of corresponding lower senses, and then approach things from a different starting point rather than only working on the labeled problem/manifestation in the higher faculty.

A guiding principle that we gleaned from these trainings is: "All students need support!"

Expressed in a positive way, this suggests that any activity that helps one of the four lower senses will also be vital to the development of its companion higher sense. Conversely, it could be counterproductive or even harmful to attack a learning obstacle head-on, without first assessing, and if needed addressing, the companion lower sense. Because almost every child has at least a little difficulty here and there, developmental games and activities can be given to any child, or to an entire class, with the knowledge that a few children deeply need them as hygienic experiences and almost all will benefit. Thus, in thinking about a lesson or a school day, it can be of great benefit to review how one worked with the lower senses as avenues to connecting with higher-level learning.

Nurturing and development of Smell, Taste, Sight, and Warmth senses is also fundamental to academic progress. Steiner once noted that human learning has a certain canine-like sniffing/tracking quality; we hunt for new ideas; try to dig out the truth.

Connections from Lower to Higher

The first lower-higher pole runs from the Touch sense to the Ego sense. This relationship is the reason it's so helpful to shake each student's hand, to remember to make direct eye contact, and when possible to touch a distracted student on the shoulder or arm rather than using (or raising) one's voice. It's worth wondering whether the epidemic of Attention Deficit Hyperactivity Disorder is to some degree driven by a deficit of bodily-kinesthetic pedagogical approaches in the modern school environment.

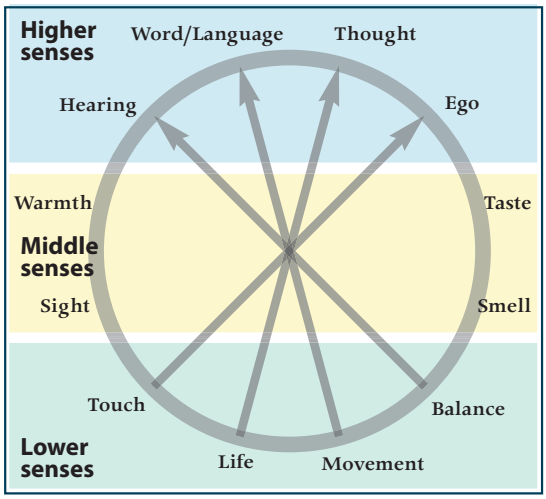
The Life sense is connected to the Thought or Concept sense: by and large people are more able to learn new

10 Karl König, *A Living Physiology* (Whitby, UK: Camphill Books, 1999).

things when well rested and feeling positive. Of the four lower senses, Life is perhaps the one where we as teachers are most in need of teamwork with parents: our teaching task of imparting new information can be made so much easier by a rhythmic and healthy home life. Quite frankly, we can build bridges to student learning only from our side of the river, i.e., when the student can arrive at school physiologically ready to meet the new school day. Every young child needs to be surrounded by adults who in word and deed convey the message "You look strong/healthy/well rested (etc.) today," or, when ill, "You are strong, you'll be well soon."

Self-movement and Language have a connection that can readily be observed through similarities between a child's speech and gross-motor movement patterns, as well as what can be seen of the fine-motor control for the jaw, tongue, etc., recruited for speech.

The organs for Balance and Hearing are co-located in the inner ear. Children who spin themselves around the classroom or who fall off their chairs are helping teachers remember to include movement breaks with an element of vestibular stimulation.



The Lower Senses and Postural Control

One aspect of a child's development calling for careful observation and helping attention can be summed up as the postural control system—how the network of bones, muscles, and nerves can make it possible to sit at a desk, stand poised with the head upright, etc. The four lower senses can be a symphony that enables the student to breathe in and out, to shift between analysis and synthesis, between joyful movement and harmonious focus. Thus, strengthening the four lower senses is one of many reasons we as teachers must attend to our own posture: "be the change you wish to see!" There's a lot more to explore on this topic.

The Common Sense

These ideas about the twelve senses and the interesting connections between them, although superficially beyond the boundaries of mainline beliefs, are in fact supported by scores of common idioms — everyday expressions that point to a wider acceptance of these deeper truths. For the lower/higher poles, examples include: "I don't follow you," "a (verbal) pat on the back," "it (the words of the speaker) made me dizzy/gave me a headache," etc. There are also common phrases pointing to how the middle senses relate to learning, including: "that [idea] doesn't pass the smell test/was in bad taste," "I see what you mean," "Let me chew on (or digest) that for a while," etc. So, "keep your eyes open" for other expressions that can "shed some light" on the twelve points of the spectrum of human senses.

…Or is it Sixteen Senses?

For several years, I puzzled with a little question about the concept of strengthening the four lower senses as an avenue to strengthening higher-sense academic capacities. That is, the four higher senses seem to relate mostly, or most strongly, to the Language Arts curriculum: listening, speaking, comprehension of language, and interpersonal communication. Placed in comparison with Harvard professor Howard Gardner's modern theory of nine multiple intelligences, the higher senses as given in Steiner's model seemed to be mostly or only about just two of the intelligences in the Gardner model—the Language and Interpersonal intelligences—and to have very little to say about, for instance, the Math/Logical and Spatial intelligences. They only related to two of the three Rs: Reading and 'Riting, but not 'Rithmetic! This interested me at a practical level because the incidence of student challenges in arithmetic/math can be as frequent as those in reading acquisition, and, if anything, more difficult to identify in the early stages.

Howard Gardner redefined intelligence to include the following nine facets of human capacity. The list below (with an example of genius for each) suggests some fields in which particular intelligences will be useful.

Language (poet, playwright, lawyer): *Maya Angelou*

Math/Logical (mathematician, engineer, philosopher): *Euclid*

Musical (musician, composer): *Aretha Franklin*

Spatial: *Albert Einstein*

Kinesthetic: *Michael Jordan*

Connections Between the Lower and Higher Senses – and How to Help			
Touch & Ego	**Life & Thought**	**Movement & Language**	**Balance & Hearing**
Developing touch strengthens the ability to connect to other human beings	Developing health, and joyful appreciation for nature strengthens thinking ability	Developing proprio-ception strengthens language – speaking writing and reading	Developing balance helps to develop listening skills, postural control, arithmetic readiness
Qualities: Trust & Acceptance: In the physical and spiritual worlds In adults' and one's own judgments Acceptance of boundaries	**Qualities:** Joy & Wonder A sense of the whole Patience; acceptance of what is not fair, of differences Self-reflectiveness	**Qualities:** Dignity & Grace Industry and uprightness Connectedness to body and earth Synthesis - parts in relationship to the whole	**Qualities:** Resilience & Freedom Ability to move between tension and release, concentration and relaxation; to quiet oneself for listening
Hindrances: Early wakefulness Overprotected Shock or trauma Sedentary lifestyle Harsh discipline	**Hindrances:** Lack of boundaries, being treated like an adult Media; limited real play Nature deprivation Poor diet	**Hindrances:** Sedentary lifestyle Poor diet - obesity Lack of healthy models for imitation Youth competitive sports	**Hindrances:** Adults who are stuck in one way of being, or who are glib, sarcastic, exhausted or short-tempered
Help needed if: Hysteria, insecurity, mistrust, cynicism Over-connection with the earthly Defensiveness, withdrawal, little consideration for the needs of others; defiant and oppositional	**Help needed if:** Quick to correct and label others; low self esteem Fear, guilt; impatient, greedy; feeling victimized Disappointment in everything Obsessive or compulsive behavior	**Help needed if:** Inferiority, hopelessness Fixed concepts; rigidity of thoughts, feelings or actions Failure to pick up nonverbal or social cues Math or speech difficulty Disorganized movement Lost in space or time	**Help needed if:** Gravitational insecurity Motion sickness or dislike of spinning movements Fear of heights Hyper-vigilant Impulsive; blurting out Cannot take turns Poor short-term memory
Games that can help: Drawing on backs; Hand clapping games; London Bridge with rocking; Simon Says; Wrestling/roughhouse games; and all throwing and catching, especially with a partner	**Games that can help:** Quiet activity - free play, nature walks, water color painting. Most of the work of helping to develop a healthy life sense must take place at home. Rhythm in daily, weekly, monthly and annual life is the key.	**Games that can help:** Tumbling Crawling games Jumping rope String games (cats cradle) Blindfold games Ball bouncing games - jacks, 7-up, etc.	**Games that can help:** Recreational gymnastics, and ANY activity that rotates the inner ear in space (e.g., rolling down a hill) or depends on balance (e.g., blindfold games) will provide a terrific benefit.

Naturalist: *Marie Curie*

Interpersonal: *Martin Luther King*

Intrapersonal: *Henry Thoreau*

Existential: *Johann von Goethe*

The Lower Senses as Foundations for Arithmetic and Higher Mathematics

I was quite excited when I happened upon a typescript of talks on arithmetic that Karl König had given to Camphill teachers.[11] König drew on information that Rudolf Steiner had given in *The Boundaries of Natural Science*.[12] König noted:

> And then Rudolf Steiner goes one step further. He asks the question: Where do these powers of mathematics come from? And he has a clear-cut answer. He says that they arise out of the three lower senses. They arise from the sense of life, from the sense of movement, and from the sense of equilibrium; so that, so to speak, these living forces of mathematics—these living abilities of counting and reckoning—they work in the sensory

11 Karl König, *Conferences and Seminars on Arithmetic, with Zoological Considerations*, http://www. waldorfresearchinstitute.org/pdf/Arithmetic.pdf, 2009.

12 Rudolf Steiner, *The Boundaries of Natural Science* (Hudson, NY: SteinerBooks, 1987).

organs of life, of movement, of equilibrium. And after these three senses are partially built up, these forces become available within the human mind. But these are not—and may I make this clear to you—these are not etheric powers. They are powers of the soul. We might also say these are the powers of the astral body. You see Rudolf Steiner describes very extensively, in the lectures to teachers, how etheric powers form our organs, form our tissues, form parts of our body, and as soon as they arise, after the second dentition, they become powers of thought.

The astral body enters the sense of life, and in the sense of life it learns to experience a difference—the difference between the feeling of well-being and unwell-being. The child… has the experience of feeling all right, and then experiences the difference when it is hungry, thirsty, suffers pain, discomfort, and so on.... And then in the sense of movement the astral body learns to find out the ratio and relation of the limbs and parts of the body towards the stretching—all that is continuous, million-fold experience is an experience of learning the proportion here on earth. And in meeting the sense of balance the astral body learns a manifoldness which is hard to describe—a manifoldness which is not a simple experience of the negotiation between gravity and levity, between the darkness of earth and the light above.

König summarizes the above as:

SENSE OF LIFE = Difference
SENSE OF MOVEMENT = Ratio
SENSE OF BALANCE = Logarithm

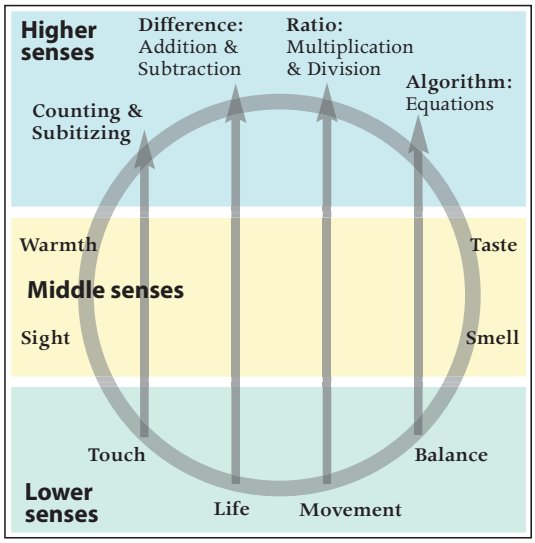
Thirteen Senses? Fifteen?

Reading the above was, for me, an "Aha!" experience—my (perhaps slightly obsessive) desire for diagrammatic completeness with respect to the links between the twelve senses and the nine intelligences had been answered. Please read the booklet and draw your own conclusions, but clearly to me, Steiner and König are both indicating the existence of a numeracy sense, or perhaps even that Difference, Ratio, and Logarithm are three (separate) higher senses, transformations of three lower senses, and matching in the realm of numeracy the lower-higher schema of Language, Thought, and Ego sense.

One More Thing…

Regarding numeracy, current research underscores the importance of two primary skills in arithmetic: subitizing and counting. (Subitizing is the ability to perceive and accurately report small quantities of objects, without counting each item. The learning goal would be to reach automaticity with the dot patterns on dice or dominoes.) Until children are secure with these two steps in the progression of numeracy acquisition, they are not ready to move on to even the most rudimentary aspects of the computational work in the Waldorf first-grade arithmetic curriculum.

Dr. König's lectures didn't reference a link between a lower sense and a higher sense for counting/subitizing. But I believe it is safe to add the connection sketched into the diagram on the right:



Children can be helped to enter the house of numbers through the first doorway of the Touch sense. This underlines the importance of working with all sorts of manipulatives in early childhood and grade one classrooms.

Jeff Tunkey, *a graduate of the five-year Spacial Dynamics training, created a blended athletic and educational support program at Aurora Waldorf School (near Buffalo, NY) where, since 1991, he has taught Extra Lesson, games/gym/gymnastics, and team sports. He has also served as the school's Educational Support Coordinator and Chair of the College of Teachers. Jeff is an instructor for the Association of Healing Education, and a mentor to multiple Waldorf schools and teachers throughout the country.*