BODILY-KINESTHETIC INTELLIGENCE

The Bodily-Kinesthetic Intelligence is the capacity to use your complete body in expressing ideas and feelings (e.g., actor, athlete, dancer, mime), including the facility to use your hands to create or transform things (e.g., artistic painter, mechanic, sculptor, surgeon).

Students with bodily-kinesthetic intelligence have these physical-based skills:
- coordination - harmonious functioning of muscles;
- balance
- dexterity - grace in physical movement
- muscle strength
- flexibility
- speed, and
- sensitivity of touch

We often talk about learning by doing. This way of knowing happens through physical movement and through the knowings of our physical body. The body knows many things that are not necessarily known by the conscious, logical mind, such as how to ride a bike, how to parallel park a car, dance the waltz, catch a thrown object, maintain balance while walking, and where the keys are on a computer keyboard.

If you have a strength in this intelligence area you tend to have a keen sense of body awareness. You like physical movement, dancing, making and inventing things with your hands, and role-playing. You probably communicate well through body language and other physical gestures. You can often perform a task much better after seeing someone else do it first and then mimicking their actions. You probably like physical games of all kinds and you like to demonstrate how to do something for someone else. You may find it difficult to sit still for long periods of time and are easily bored or distracted if you are not actively involved in what is going on around you.

BK intelligence is the ability to control body movements and handle objects skillfully. These learners express themselves through movement. They have a good sense of balance and eye-hand co-ordination. Through interacting with the space around them, they are able to remember and process information. They learn best through a hands-on approach, actively exploring the physical world around them. They may find it hard to sit still for long periods and may become distracted by their need for activity and exploration. You can tell these b-k kids by their difficulty sitting still or staying in their seat, use body gestures and physical movement to express themselves, good at sports, well coordinated physically, likes to invent things, put things together, take things apart; likes to demonstrate to others how to do something.

Gardner notes that the b-k intelligences is not widely developed in our culture. Outside of sports, it is not highly valued, especially as a form of expression. In children, bk has not yet atrophied; they naturally use it in their actions, explorations, expressiveness, and communication. It appears that this area of intelligence is more engaged and accessible when we are children. Teachers tend to think that way - preprimary classrooms are the
most active, allowing kids multiple opportunities to explore. Kids can’t move enough, but as we grow and mature, adults won’t move at all. When I give workshops for teachers it’s hard as heck to get volunteers for demonstrations. I need to assure them that they’re not going to embarrass themselves, and even then it’s like pulling teeth to get adults to move. As teachers, we actually model limiting b-k development in children.

THE KINESTHETIC COMPONENT
To get you thinking about the various components of the b-k intelligence, read through the next two sections. Try to put yourself in a crowded workshop with lots of other teachers attending a presentation on the b-k intelligence.

B-K as Body – Communicator

The body is a profound vehicle of communication. At the most basic level this communication occurs through facial expressions, body gestures, and physical postures, all of which we use to enhance and deepen our communication with others. At the most complex levels it occurs through such things as interpretive dance, mime, and the human tableaux or human sculpture. In between these extremes, we find such things as the game of charades, the role-playing activities of children, and

What can you observe about the person sitting next to you? What about the other people in this room? What generalizations can you make about any one person?

You would answer these questions by using gestures, body posture and other physical movements; all that we call body language.

What about yourself? What can other people interpret about you because of your body language?

Getting acquainted with your kinesthetic body

1. Close your eyes, focus on your breathing, relax, get centered, get rid of everything else in your mind

2. Make a mental note about everything you are feeling and observing in your body.

3. Mentally scan your body, moving from your feet to the top of you head
   ● What are the feelings and sensations in each part of your body?
   ● Are you equally aware of all parts of your body? Are some parts difficult to sense?
4. Keep your eyes closed, and with as much attention and mindfulness as possible, slowly raise your right hand over your head and stretch your arm. (If you are left-handed raise your left hand). Pay very close attention to everything that happens in your body.
   - What muscles are involved and how do they move?
   - What happens to the alignment of your body as you raise your hand, especially when you stretch?
   - What do your shoulders do? Your chest? Your hands and fingers? Your head? Your legs?

5. Now, paying closer attention, lower your arm and again watch and feel everything that goes on in your body. (Ask yourself the previous questions).

6. How is raising arm different from lowering arm? How is it similar?

7. Now, in your mind, imagine that you are raising your hand over your head and stretching your arm. Try to experience the total process in your imagination as vividly and with as much reality as when you were doing it with your physical arm.
   - What are the muscles that are involved?
   - What happens to the alignment of your body, especially when you stretch?
   - What do your shoulders do? Your chest? Your hand, fingers? Legs?

One more exercise:

Stand in a comfortable position and close your eyes. With as much attention and mindfulness as possible, begin to circle your arms and shoulders forward, around and around, like a windmill. Feel the forward momentum of your arms and shoulders as they circle.

Stop circling your physical arms and shoulders but continue with your kinesthetic arms and shoulders. See if you can continue to feel the momentum in your body.

Keep going back and forth between the physical experience and the kinesthetic experience until you almost cannot tell the difference between them.

In his autobiography, *Breaking the Surface*, Greg Louganis, two-time Olympic gold medalist, recounts how important mental imagery was in helping him reach perfection in diving. Golf pros often talk about how mental rehearsal has helped them improve their golf swings.
THE UNDER-VALUED INTELLIGENCE

While the bodily-kinesthetic intelligence is recognized as one of the multiple intelligences, it is one of the most undervalued in our schools. We seem not to understand that learning requires a physical response, physical interaction, all of which are natural to most children. Learning is not a spectator sport! Students need to be provided with structures that allow them to actively process information.

Through experiential learning we draw out a deeper understanding of the world in which we live. Using Piaget’s theory, between the ages of two to seven years, the preoperational period, the child begins to conceptualize “through concrete and motor examination of the many dimensions of the external world....This information, derived from the child’s active, physical interaction with the environment, provides the data base for building more complex conceptual representations of reality and for supporting the elaboration of these conceptualizations...into higher-order, abstract thought processes.” In other words, young children are processing the world through information they are taking in with their bodies, which later becomes the foundation for abstract thought. It stands to reason, then, that during this period children can more easily grasp a lesson that is taught with an active, physical language.

As children, ages 7 - 11, develop through the next stage, concrete operations, thought can precede action, but children remain secure in their active/physical reactions to the world. Introducing or reinforcing lessons through a kinesthetic language can greatly assist their understanding of the material. For many children, using their kinesthetic intelligence can clarify principles and information that may elude them in other languages of learning.

For teachers concerned about educating the whole child, b-k can open many doors. Dance, creative movement and kinesthetic activities nourish growth in cognitive and affective domains of development. Kinesthetic teaching makes subject matter accessible by concretizing the abstract. It involves children in the creative process and develops higher-level thinking and social skills. It provides an affirmative means for self-expression. Teach from the known to the unknown.

MOVEMENT FACILITATES COGNITION

There are three distinctions or definitions of movement when reviewing brain research that need clarification: Movement, Physical Activity, and Exercise. Movement is the navigation of one's environment, in other words not sitting still or not lying down. Physical activity is voluntary movement that expends energy. Examples of physical activity in the classroom are students role-playing, building models, or playing a toss and catch game to review material. Exercise is physical activity that gets the heart rate into the target heart rate zone.

Movement prepares the brain for optimal learning. Blood traveling to the brain feeds the brain the needed nutrients of oxygen and glucose. Glucose is to the brain what gasoline is to a car, brain fuel. Each time you think, you use up a little glucose. A lack of oxygen to
the brain results in disorientation, confusion, fatigue, sluggishness, concentration, and memory problems. Vigorous activity in a physical education class gives the brain its needed nutrients.

**THE IMPORTANCE OF PHYSICAL ACTIVITY**

Adding to the growing body of knowledge extolling the cognitive benefits of physical exercise, a recent study concludes that mental focus and concentration levels in young children improve significantly after engaging in structured physical activity (Caterino and Polak, 1999). The findings suggest that such physical exercise as running, jumping and aerobic game playing have a definite impact on children’s frontal lobe, the primary brain area for mental concentration, planning and decision-making. Aerobic conditioning seems to assist in memory (Brink, 1995). Dustman’s research (Michund and Wild, 1991) tested three groups of students. The group that engaged in vigorous aerobic exercise improved short-term memory, creativity and reaction time. The President’s Council on Fitness and Sports suggests 30 minutes of physical activity a day to stimulate the brain. This based on research that shows academic scores went up when physical education time was increased to one-third of the school day (Vanves and Blanchard). Students involved in sports generally have higher grades and highest standardized test scores than those who do not participate in sports. From my own personal experiences with my children, I have seen that the more active they are the better they do academically in school. Every soccer season, my son would have a straight A average; during non-sports seasons, he struggled to maintain a B average. Researchers James Pollatschek and Frank Hagen (1996) say that children who engage in daily physical education show superior motor fitness, academic performance and attitude toward school as compared to their counterparts who do not have physical education.

Researchers found that subjects who were the most aerobically fit had the fastest cognitive responses, measured by reaction time, the speed that subjects processed information, memory span, and problem solving. Aerobic activity not only increases blood flow to the brain, but also speeds recall and reasoning skills. (Etnier, et al. 1999) (Van Boxtel, et al. 1996)

Exercise triggers the release of BDNF a brain-derived neurotropic factor that enables one neuron to communicate with another. (Kinoshita 1997) Students who sit for longer than twenty minutes experience a decrease in the flow of BDNF. Recess and physical education is one way students can trigger sharper learning skills.

Crossing the midline integrates brain hemispheres to enable the brain to organize itself. When students perform cross lateral activities, blood flow is increased in all parts of the brain making it more alert and energized for stronger, more cohesive learning. (Dennison, Hannaford) Most all of the activities we do in physical education cross the midline and require coordination of body systems for mastery at any level. Daily quality physical education then becomes essential for optimum learning.

**Activity can help reinforce academic skills for all students**
Eighty five percent of school age children are natural kinesthetic learners (Hannaford). Sensory motor learning is innate in humans. Teachers who incorporate kinesthetic teaching strategies reach a greater percentage of the learners. Eric Jensen says that implicit learning (learning through your body) is more powerful than explicit learning (text, facts, and basic recall). If it’s not in your body, you haven’t really learned it. He suggests movement, physical activity and rhythms as a way teachers can help students bind learning through perceptual motor skills, procedural encoding, and sensory integration. It should be just as natural for a math teacher to use movement in the classroom as for a physical educator to have students skip count.

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**Recess/Play can increase attention**

Dr. Daniel Kripke of California explains that the human brain was designed to set the timing of circadian rhythms from extensive exposure to daylight. When there is too little outdoor daylight exposure or inadequate indoor lighting, circadian rhythms times are off, like a clock that runs too slow. This condition is called delayed sleep phase syndrome. When this happens, a child or adult has trouble falling asleep at normal bedtime and trouble waking up when the alarm goes off in the morning. More importantly, attention may be inadequate for several hours after awakening. Recess is being sacrificed for more academic time in the classroom, limiting needed bright daylight exposure that effects the children’s optimum learning because of lack of rest. Physical education class that is limited to once or twice a week reduces time for natural daylight and needed instruction on health and fitness habits for lifetime learning. The result is students who are lacking attention for learning because of deprived rest from delayed sleep phase. Free play at recess augments social and cognitive development that ultimately translates into classroom performance. Children who learn to operate among their peers participate in such interactive games as tag and chase and function in their own mini-societies on the playground will do better academically. (Mike Daniel, Dallas Morning News, 11/24/2000)

**PERSONALS**

Children constantly learn on multiple levels. Fact gathering and other cognitive exercises are only a part of that process. Children are also learning how to interact with others; how they fit into the world around them; who they are; how to problem solve.

BK lessons can provide opportunities for a child to learn on many levels beside just the cognitive. In a successful b-k lesson, children are learning to make use of their own experiences and observations as a foundation for knowledge. This nurtures self-affirmation and self-esteem because the children’s natural resources, their own bodies, are bringing them to a place of understanding.

How do you choose a topic that will lend itself to a kinesthetic approach and ensure that this class time will be educational, successful and fun? Look for topics that offer at least one of the three points of access:

1. The possibility for creative interpretation
2. Kinesthetic elements (motion, time, shape, space)
3. Authentic dance forms

1. **Creative Interpretation**

   This is probably the easiest for a person untrained in dance. Any subject that involves some sort of drama or emotion can probably be interpreted through movement by the children. If you can imagine your students acting out a story or situation without using words, you probably have an appropriate lesson.

   Through movement, the children will experience the sequence of events, the action, the interactive forces in the story, the physical setting. Concepts like “main idea” or “cause and effect” become more accessible.

   As a general rule, rather than choosing different children for different parts, allow everyone to do everything. That way, each child will experience all the aspects of a story, just as the reader of a book does. A good exception to this rule is when there are two clear opposing forces, as in an Aesop’s fable. Here it is helpful to allow children the dynamic interplay between the elements.

   Movement interpretation isn’t limited to just narrative storytelling. It is also a wonderful way for students to get inside history. The story of Rosa Parks not giving up her seat, or the tearing down of the Berlin Wall are even more dramatic when the students interpret them through their own movements.

   Even creative writing can be enhanced through movement. Emotions of anger, shyness, fear and loneliness can be experienced through physical improvisation by the writer so that his or her descriptions become more nuanced and subtle. Words like “nice” or ‘scary’ or happy’ or ‘sad’ can be given shape and texture through movement. By physicalizing their imagery, children will find the words to better describe happy, sad, big or little. The process of going back and forth from moving to writing can thus enrich vocabulary and make language come alive.

2. **Kinesthetic Elements**

   Does a topic have a relationship to motion? Time? Shape? Space?

   Are any of these elements of dance essential to the central understanding of your lesson?

   If so, you’ve got a topic that’s appropriate for a kinesthetic lesson.
Time: time not only involves the speed at which something happens, it can also involve the duration (lasting through time), transformation (changing through time) or sequenced (order in time). The cycle of plant growth from seed to seed, the water cycle, the metamorphosis of a butterfly, the cycle of season, or math patterns.

Another way to view time is through rhythm. Clapping and moving the rhythm of spoken language is a very successful way to teach syllables. Which subject uses the word time: multiplication. The magic of multiplication can be experienced through movement. 3+3+3+3 do at the same time: 4 x 3

Space: Kinesthetic teaching is perhaps most direct in the realm of space. Space refers to three-dimensional space (height-weight-depth).

- Physical and directional concepts - large, small, far, over, under, through
- revolution vs. rotation
- clockwise vs. counterclockwise
- relationships of planets and other bodies in the solar system
- gases versus solids

Shape: shape as a kinesthetic element becomes most obvious when teaching art and design, symmetry and asymmetry, letter and number shapes, and geometry. But can be seen other not so obvious subjects;

- punctuation; (use body to create marks)
- long and short vowels

The accessibility of shape as a kinesthetic element makes it especially good for giving information (bats rest hanging upside-down), simulating associations (create the shape of a rainforest animal), or directing the focus (make the letter shape of a vowel) at the beginning of your lessons. Shape can also provide a transition to the more subtle element of motion: Make your body into a shape that is round, (or long, or sad, or....). Now move in that shape. This process of joining shape to a locomotor movement helps inspire more creative detail in movement across the floor and expands a child’s movement vocabulary.

The creation of motionless group shapes, called tableaux, can also be a very expressive learning experience. They may be done singly as in a statement, or in a series to show states of transition within a cycle. Creating sculptures made of still, posed bodies, children can depict a scene from a story, from a time in history (black person drinking from a whites only water fountain), a moment of transition (butterfly), or relationship between people or characters (antagonist and protagonist in a story). Tableaux are best made in groups of three to five children, using various shapes on differing levels, to be viewed from all perspectives like a sculpture in a park.

Dance:

The third point of entry for creating kinesthetic lessons is authentic dance forms, which can augment the study of literature or history to reveal deeper dimensions of diverse
cultures. Exposing young children to other cultures through dance and music expands heir understanding of a pluralistic world in which difference is respected and universality is celebrated.

Apart from supplementing traditional teaching approaches to elementary curriculum, kinesthetic learning can offer children the chance to engage in the creative process through dance. As in the creation of any art form, choreography calls upon and develops a multitude of skills. Just like in the writing process, choreography leads children to develop the germ of an idea through many stages of brainstorming and exploration, analysis and synthesis, refinement and editing. Discipline, persistence, and the ability to be organized and to take risks are general requirements for success. More specifically, students must embark on a journey to gather ‘information’ about a subject – facts or feelings, externally derived or personally intuited.

By providing children with a physical language to experience the creative process – a process which some cannot access through the written word – we can deepen their cognitive development. In fact, the cognitive skills identified in Bloom’s Taxonomy parallel the creative process: knowledge, comprehension, application, analysis, synthesis, and evaluation are all integral to the creation of art.

Dance, perhaps the oldest art form of human expression, is a particularly compelling way for children to explore and experience the universality and the particularity of those cultures. By learning ethnic dances and physically interpreting poetry, literature and folklore, children develops insights into the aesthetics and value systems of other lands and other people.

**Deciding on the Kinesthetic Approach**

Since all subjects are not necessarily suited to a kinesthetic approach, clarifying the specific point of access will help you determine whether to get involved in movement. Simply stated, you want the children to experience or express kinesthetically whatever you are studying. If the topic involves emotion, have the children feel and express the feelings. If it moves, have them re-create the movement with their bodies. If it involves time, have them experience the timing. If it involves pace, have them physically describe the spatial relations. If it has shape, have them make the shape with their body, alone or as a group. If it involves another culture, have them experience elements of that culture through dance. Ask yourself what you want your students to learn from the lesson, then choose kinesthetic elements to bring home that learning.

There are always some teachers who like to bounce around the classroom, sit on children’s desks, gesture emphatically, and sit on the floor. Others are more reserved with their body, and prefer to sit on chairs, write at desks and stand at the board. Children, however, universally love to move. Children don’t need to be shown how to move; instead, they need permission to do so. They need structure, guidance, affirmation
and sincere praise, none of which requires the teacher to leap in the air. Your job is to be the director, not the actor.

Kinesthetic teaching reflects the natural language of children. As you give them permission to ‘speak’ this language in the classroom, your students will amaze your with their abilities to interpret, express, and analyze ideas through movement.

**ADD/ADHD**

By providing alternative paths to subject matter, b-k learning can save some children from failure. Rather than losing out on the whole learning package, the child who gets distracted or frustrated by traditional forms of teaching can often be motivated and find connections through movement. By channeling disruptive fidgeting into constructive creative movement focused on a particular subject, these children can emerge as leaders. They’re moving, their blood is flowing, their oxygen level has increased, so has their interest.

A serious component that may contribute to children's inattention and hyperactivity during the school day may indeed be the school systems themselves. Fast paced culture, media influences, and unstable family environments all over-stimulate children, yet they are still expected to be able to sit quietly for extended periods of time in classrooms filled with children. Despite differences in learning styles, abilities, temperament, and interests, children are being forced to conform to rules and curricula designed decades ago. Additionally, inappropriate behaviors and lack of attention are treated as symptoms of brain disorder rather than addressed and corrected for the symptoms of the disordered lives they truly represent (LeFever, Dawson, and Morrow 1363).

Many individuals implement numerous accommodations and interventions in order to assist children. Reminders such as lists, schedules, alarm clocks, incentive plans, offering frequent feedback, and token-reward systems are the most frequently recommended interventions. Adjusting the child's classroom environment and activities, reducing distractions in the classroom, adjusting the type and amount of assignments given, giving only one assignment at a time, breaking up assignments into smaller tasks, and altering or reducing the written workload are popular accommodations and interventions (Hallowell and Ratey 222-223). Unfortunately, constant reminders, coaching appropriate behaviors, and administering medications are not treatments that will transform children into independent adults. Psychology professor David Stein says, "These techniques may be viewed as reinforcing a child's dependency on constant help from external sources" (63). Stein goes on to comment that classroom and parenting accommodations "...produce unsatisfactory results because they fail to improve children's 'thinking' and 'awareness' and actually reinforce the 'not thinking' and lack of awareness..." typical of children who are labeled AD/HD (64).
Following are successful strategies for kinesthetic learners:

- take frequent breaks
- move around to learn new things (e.g. read while on an exercise bike; mold a piece of clay to learn a new concept, use a koosh ball to squeeze while trying to pay attention)
- work at a standing position
- chew gum while studying
- highlight reading material, or write notes in the margins to help focus attention

Research on kinesthetic learners has several sources. Kolb and his associates have validated the notion that some people learn by "observing" and others learn by "doing". Likewise, there is a separate polarity between those who process information by "thinking" and those who process by "feeling". Kinesthetic learners are both "doers" and "feelers," qualities they share with only a small minority of teachers.

Gardner has developed the theory of multiple intelligences, and argues that the conventional focus on verbal-linguistic and logical-mathematical intelligence disadvantages some students, who are likely to be bored by conventional methods of teaching. So, the main question is: what can you as a teacher do?

Look at your classroom –

- Can students move around in the classroom and not be at their desks the entire day/period?
- Are there materials that allow students to build, design, to explore a new concept physically, to have hands-on experiences?
- Are there spaces for students to perform and/or practice plays, tableaux, dance or other movement activities?