

# EDUCATION REVIEW



## CONTENU

Daily Physical Interactivity .....	2
Developing Mindfulness-Based School Physical Activity Programs .....	4
Health-Related Fitness: An Interdisciplinary Approach to Implementation in Physical and Health Education.....	6
Natural Movement in Early Physical Literacy Development .....	8

## MESSAGE FROM THE VICE-DEAN

David Smith, *Professor, vice-dean (Research)*

There is no shortage of bad news these days about the health of our children. More and more hours in front of screens — televisions, computers, and gaming consoles — and less and less time doing vigorous physical activity are making our children ill. Childhood obesity, and the illnesses that it begets, is increasing relentlessly. It has been ominously predicted that the current generation of children and youth will see their life expectancy diminish relative to their parents for the first time in recorded history. If there ever was a wake-up call, this is surely it!

In this context, schools and teachers have increasing responsibilities for the health of their students. Nutrition policies and mandated daily physical activity are now part of everyday life at school. Educational researchers have their part to play in confronting these challenges by disseminating information about effective practices for physical and health education. This second issue of the uOttawa Educational Review, led by Prof. Rebecca Lloyd, is intended to be a small part of this important movement toward reversing these dangerous trends. I hope you find these articles informative and useful as you face these challenges in your own classroom practice.

I would be pleased to receive your thoughts and ideas to assist us in making the uOttawa Education Review as appealing as we can. Please do not hesitate to share your comments with me by email at: [vdre@uottawa.ca](mailto:vdre@uottawa.ca).

Happy reading!

**David Smith, Professor**  
Vice-Dean (Research)

# DAILY PHYSICAL INTERACTIVITY

Stephen J. Smith, PhD, Simon Fraser University

The need to address the quality of life consequences of the 'inactivity epidemic' (Hales, 2007, pp. 108-113), with all its related health risks (e.g. Active Healthy Kids Canada, 2011; Coalition for Active Living, 2004), has given rise to daily physical activity (DPA) programs across the country. Health Canada guidelines on the baseline measures of physical fitness and the DPA levels necessary to promote "healthy growth and development" in children, "ease and comfort" of performing daily tasks for adults, and the maintenance of "bone density, strength, flexibility, balance and coordination" for seniors, provide a much needed resource for the implementation of DPA programs in schools (Health Canada: Physical Activity, 2011). Yet, while the evident need for such programs is unquestionable, there is a desired and educable component that remains largely unacknowledged. I refer to what is generally called the 'affective' dimension to physical activity, which includes the individually-experienced feelings, emotions and moods that motivate and sustain engagement in physical activity along with the positive 'affects' of engaging with others.

As stated by the International Platform on Sport and Development (Sportanddev.org, 2011): "The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as physiological, cognitive and affective benefits, however, that does not exclude the social and inter-personal benefits of sport and physical activity which can also produce positive health effects in individuals and communities." Certainly 'personal and social responsibilities' is a key plank of physical education programming in each of the Canadian provinces (Kilborn, 2011). But this affective dimension seems mostly a psychological byproduct of physical activity, such as enhanced 'self-esteem,' or captioned as the skills and behaviors of 'fair play, leadership, conflict management and cooperation.' What about the joyful feelings of movement and the enjoyment of engaging with others in physical activity? What about the sustaining health consequences of daily physical interactivity?

It is curious that interactivity has become closely aligned with digital technologies, especially when so much blame about children's inactivity is attributed to sedentary patterns of computer usage and on-line communication. The seeming hunger

for Facebook, Twitter, gaming and other such connections with others should alert us to a great need for daily interactivity which can be met through active as well as sedentary means. Daily physical interactivity (DPI) can be promoted as a necessary complement to technologically-mediated interactivity and, in particular, as a curricular emphasis within current DPA and PE programs. I turn now to consider a few illustrative ways in which teachers can provide this DPI emphasis.

Let us consider the most fundamental process of living upon which a set of interactivities can be created. Breathing. It is with attention to the breath that we can connect deeply with ourselves and with others and find ourselves inspired literally to move with greater kinesthetic sensitivity. Breathing together, with others engaged in the same activity, may take the form of a jog with a friend or training together in the weight room. There are also interactivities which emphasize the breath as the means of bringing us together. For example, consider the simple activity of sitting comfortably on the floor, back-to-back with a partner, and attending to breath. Partners inhale and exhale, filling their lungs, feeling their diaphragms. They continue breathing in and out, with the motions of their partners starting to feel like their own. Soon a feeling of breathing with another occurs, the inhalations drawing partners into a doubly-expanded space and exhalations dispelled from both sides at once. This back-to-back breathing melds two bodies into seemingly one being.

Now, imagine how this simple yet profoundly moving activity might be extended. Partners could remain sitting back-to-back, with legs extended, but as one breathes out while leaning forward towards the knees, the other person breathes in and opens her arms to expand the chest and leans back to rest on her partner's back. Partners might then link arms, breathing in as they push from the floor to a standing position, breathing out as they return to the floor seated position. They might then transpose this breathing to group and circle activities, linking hands to support one another in motions of pulling and pushing in unison, supporting one another in bridging and other balances. They might take this sense of breathing into such varied activities as synchronized swimming, partnered dance, pairs diving, sculling twos to eights, climbing on belay lines, and baton changing on the track.

*Dr. Stephen Smith is Associate Professor and Director of Professional Programs at Simon Fraser University. His scholarly work pertains to curricular and instructional practices in physical education, health education and teacher education. Illustrative publications are the 1997 book "Risk and our pedagogical relation to children: On the playground and beyond," and the 2004 book "The bearing of inquiry in teacher education." His recent work addresses vitality and kinesthesia as overarching concepts of physical education and, more broadly speaking, of a somatic approach to teacher education. His scholarship draws inspiration from a range of traditional and alternative movement disciplines from games and sports to circus and equestrian arts.*

Photo Michele Black



The possible scope of daily physical interactivities pertains not simply to breathing but to the kinesthetic qualities of balance, rhythm and contact. BOSU, teeter-totter, ball balancing, as well as rock hopping, unicycling and slack lining bring balance to the fore. Timings and rhythms can be encouraged through, poi spinning, juggling, hacky sack and hooping. Interactive touch can be felt in partner exercises, mirroring activities, partnered dance, and various martial arts. Balance can, of course, be developed individually, just as rhythmic activities can be performed alone. Contact, too, need not involve others. Yet, with a little curricular imagination, it should not be too difficult to foster balancing, timing and contacting within interactivities that progress from simple motions, such as were described in the case of breathing, to the complexities of games, sports, dances and pastimes.

If quality of life truly guides the promotion of PE and DPA as the programmatic antidotes to inactivity, then we need to take heed of how quality of life is a significant register of kinesthetic sensitivity to others. It is not enough to teach children and youth the skills and tactics of games and sports, or the isolated motions of dance, gymnastics and outdoor pursuits. These are merely their kinetic features and not the 'feelings' that will sustain an active and healthy lifestyle. Such 'feelings,' I contend, can be cultivated as 'feelings for others.' The mantra of PE and DPA can be extended to daily physical 'interactivity,' with curricular inclusion of games and sports and dance, and all manner of kinesthetically enhancing activities, that become more than just the pursuit of personal satisfactions (Lloyd and Smith, 2010).

#### References

Active Healthy Kids Canada (2011). Report card on physical activity for children and youth. Retrieved May 1st, 2011 at: <http://www.activehealthykids.ca/ReportCard/2011ReportCardOverview.aspx>

Coalition for Active Living (2004). Towards a physically active Canada. Report presented to the Canadian Government, Standing Committee on Finance Re-Budget Consultations, April 2004.

Hales, D. (2007). An invitation to health (12th edition). Belmont, CA: Thomson Wadsworth.

Health Canada: Physical Activity (2011). Retrieved May 8th, 2011 at <http://www.hc-sc.gc.ca/hl-vs/physactiv/index-eng.php>

Kilborn, M. (2011). Physical education curriculum across Canada. Presentation at the Canadian Society for the Study of Education, University of New Brunswick, May 29th-June 2nd, 2011.

Lloyd, R. J., & Smith, S. J. (2010). Moving to a greater understanding: A vitality approach to 'flow motion' in games and sports. In J. Butler & L. Griffin (Eds.), Teaching games for understanding. Champaign, IL: Human Kinetics, pp. 89-104.

Sportanddev.org (2011). The health benefits of sport and physical activity. Retrieved May 8th, 2011 at [http://www.sportanddev.org/en/learnmore/sport\\_and\\_health/the\\_health\\_benefits\\_of\\_sport\\_and\\_physical\\_activity/](http://www.sportanddev.org/en/learnmore/sport_and_health/the_health_benefits_of_sport_and_physical_activity/)

# DEVELOPING MINDFULNESS-BASED SCHOOL PHYSICAL ACTIVITY PROGRAMS

Chunlei Lu, PhD, Brock University (Canada)

Jian Jiao, PhD, Qilu Hospital, Shandong University (China)

**M**indfulness refers to the state of being fully engaged in the present moment, here and now (Hanh, 2006; Lu, Tito, & Kentel, 2009). Numerous studies have highlighted the benefits of incorporating mindfulness into physical activities. Some of the reported benefits of a more mindful practice include: fostering body-mind oneness; obtaining a balance between subjective and objective knowledge in physical activity; helping students develop an appreciation for the process (as opposed to the final product); having flow experiences; cultivating natural movement; accepting both the self (e.g., body image) and others (e.g., races, abilities, cultures); enhancing learning; dealing with stress and other mental problems; maintaining well-being; and fostering peace, patience, trust, and openness (Brown & Ryan, 2003; Kabat-Zinn, 1990; Lu, Tito, & Kentel, 2009).

Despite its numerous benefits, mindfulness is as a critical missing component in school physical activity programs, and has not been widely practised in physical education, intramural, or interscholastic physical activities (Bain, 1995; Francis & Lu, 2009; Lu, Tito, & Kentel, 2009). The purpose of this paper is to discuss how to develop mindfulness-based school physical activity programs. The following principles and examples are provided for teachers to help them initiate mindfulness-based school physical activities and eventually, to create their own ideas for building mindfulness into their physical activity programs.

## “Mindful-ize” physical activities

As the majority of current physical activities in school are not necessarily mindfully oriented, instructors must “mindful-ize” activities for students by demonstrating these principles: 1) fully indulging in, and bringing focus to, performing an activity; 2) paying attention to breathing in all physical activities; and 3) being aware of the movement performed, and not rushing through an action. Another key rule is to avoid mechanical movements (e.g., those that only focus on training specific muscles), and to try to transform physical activities into flowing and natural movements (e.g., forms of game or dance).

Incorporating Eastern movement disciplines such as Eastern martial arts (e.g., taijiquan, judo) and meditation practices (e.g., yoga, qigong) in physical activity programs can provide an excellent introduction to mindfulness, as these activities pair meditative techniques with movement.

## Avoid multi-tasking

Multi-tasking is typical with body-mind dualistic exercise, but is detrimental to mindful activities. For example, teachers often save time in physical education classes by giving instructions while students are stretching — the body is doing one thing while the mind is doing something different. Instead, teachers should instruct students to focus on the sensation within their muscles while stretching. This permits the mind to follow breathing and movement and develops a true body-mind oneness. By the same token, students should not be encouraged to use earphones or TVs when exercising as this creates body-mind binary (non-mindful) practice.

## Value subjective experiences

Students’ subjective feelings, emotions, and enjoyment are critical to fostering healthy active lifestyles. Mindfulness suggests we listen to our breath, know our heart beat, recognize our joy or sorrow, and even acknowledge pain and fatigue. In doing so, we can let the mind dwell in the body and have the body reside in the mind, forming a body-mind unity. The students’ subjective experiences should be assessed by students themselves; while mindfulness does not favour judgment, appropriate assessment of their subjective experiences can help students to better appreciate them.

## Accept the self and others

Non-mindful people tend to have estimations and opinions that are trapped by rigid categories formed over time and usually springing from a single perspective—a recipe for prejudice, intolerance, and egoistic narrow-mindedness. Regardless of body size, race, ability, or cultural orientation, acceptance of the self and others is a happy by-product of more mindful activities as it encourages an appreciation for the whole versus

*Dr. Chunlei Lu is an Associate Professor in the Department of Teacher Education, Faculty of Education, Brock University in Canada. He obtained B.Ed (China), M.Ed (China), M.Sc (USA), and Ph.D (Canada). He has been teaching curriculum and instruction in health and physical education in a number of universities in those three countries. Based on these cross-cultural experiences, his research evolves from the areas of culture, education, and health. He has published one book, five book chapters, and over 40 refereed articles in academic and professional journals. Mindfulness has been one of his research interests in recent years.*

*Dr. Jian Jiao is a clinical Associate Professor at Qilu Hospital of Shandong University, Jinan, China. She specializes in Chinese-West medicine integration. She has authored a book and has published over 10 articles.*

the isolated components. Acceptance of the self and others does not mean an end to striving for improvement in health; but rather, it creates a comfortable basis to make reasonable progress in developmentally appropriate programs.



Illustration Olivia Shenyi Lu

### Focus on the process

Instructors tend to lead, or even rush, students to reach planned expectations or objectives without emphasizing the importance of the learning process. This goal-oriented practice may be

productive, but is often at the cost of generating psychological problems (e.g., excess anxiety and stress) and a non-mindful mentality. As a matter of fact, all products (e.g., goals, objectives, outcomes, expectations) that we set up are only parts of the process in an individual's life. Thus, mindful teachers should stress an appreciation for the process as much as for the product, for instance, advising students to value their feelings such as breath, muscle, and wind in running (rather than only focusing on how fast or how far an individual can run).

### Appreciate the surroundings

In practicing mindfulness, students can impartially feel inanimate surroundings (e.g., physical activity equipment, gym, playing fields) and the animate environment (flowers, trees, a creek cross the school backyard, groups of students playing games). These surroundings have their own ways of being; and mindful awareness of these elements nurtures interconnectedness and wholism. Instructors should encourage students to appreciate the surrounding natural sounds around them, for example, the noise in the gym, the sound of bird or wind when having physical activity outside.

### Conclusion

Developing mindfulness-based school physical activity programs does not mean discontinuing what educators have been doing; rather, it means taking a second look at current practices and re-orienting instruction to foster a more meaningful and wholistic program. By developing mindfulness-based school physical activities, detrimental problems such as student anxiety, intolerance and stress can be diminished while programs can be re-conceptualized toward more wholistic wellness and harmonious body-mind oneness. In turn, students can integrate these benefits into their daily lives and develop truly healthy lifestyles.

### References

- Bain, L. (1995). Mindfulness and subjective knowledge. *Quest, 47*(2), 239–253.
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well being. *Journal of Personality and Social Psychology, 84*(4), 822-848.
- Francis, N., & Lu, C. (2009). The conceptual framework of the Eastern approach in physical education: Ancient wisdom for modern times. *ACHPER Healthy Lifestyles Journal, 56*(2/3), 23-27.
- Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York: Delacorte.
- Lu, C., Tito, J., & Kentel, J. (2009). *Eastern movement disciplines (EMDs) and mindfulness: A new path to subjective knowledge in Western physical education. Quest, 61*(3), 353-370.
- Hanh, T.N. (2006). *Present moment wonderful moment mindfulness verses for daily living*. Berkeley, CA: Parallax.

# HEALTH-RELATED FITNESS: AN INTERDISCIPLINARY APPROACH TO IMPLEMENTATION IN PHYSICAL AND HEALTH EDUCATION

Rebecca Lloyd, PhD, University of Ottawa

**F**itness programming within Health and Physical Education (HPE) curricular frameworks is defined primarily by the science of exercise physiology. Components of health-related fitness (HRF), namely cardiovascular fitness, muscular strength, flexibility and endurance, are the baseline parameters for promoting children's health (Welk, 2006), with assessment practices based on the assumption that "more is better", e.g., more pushups and sit-ups in succession, and more extension in a sit-and-reach test. But what if HRF could be understood beyond the simple reduction to an exercise physiology? What if it could be considered more than simply moving the body "harder", "faster", or more "efficiently" for the sake of "getting fit"?

Rather than perpetuate an external frame of reference that informs HRF practices and assessments, HPE teachers may also consider the feelings, emotions, bodily pleasures and tensions experienced in the process of becoming fit. Thus, teachers might consider implementing HRF with an interdisciplinary intertwining between exercise physiology, embodied philosophy (Merleau-Ponty, 1968) and somatic practices (Conrad, 2007).

Consider, for example, how such an interdisciplinary approach to becoming fit might be applied to the strength activity of performing a squat supported by a Resist-A-Ball™ and a wall. The activity of a wall-ball-squat may begin with familiar instructions, such as engage your core by gently pulling your navel toward your spine, walk your feet out so that your knees bend at a 90 degree angle, and "keep your spine extended throughout the movement with the back pressed into the ball" (Resist-A-Ball, 2009, p. 42). Once the motion is cued, students may be encouraged to repeat it as they normally would, experiencing what Conrad (2007) would describe as "localized" mobility at the hip and knee joints as the torso, head and neck are held with various registers of rigidity.

After students have completed a number of repetitions where they are able to demonstrate a sense of postural stability, knee alignment and familiarization with the exercise, they may be encouraged to explore it beyond the constraints

of efficiency. Perhaps they may be provided with the argument that Emilie Conrad (2007), a leading somatic educator of movement, presents as she notes that repetitive up-down movements have "been shaped by the Industrial Revolution, where factory workers constantly repeat the same movements, similar to the machines they are working with" (p.306). If movement continues to be experienced in a repetitive way, where no new information has an opportunity to seep into and thus shape the experience, minds disconnect from sensing the movement, bodies become machine-like.

## Slow Flow Motion Squats

Students may explore what it might be like to experience a wall-ball-squat beyond the goal of becoming "efficient and direct" (Conrad, 2007, p. 307). Invite them to s-l-o-w d-o-w-n so that they might experience the creativity that "exists in the cracks between things [...where] the 'emerging unexpected'" (p. 307) arises. A wall-ball-squat might then be experienced beyond the stable and predictable linear pathway between the two end phases of the up-down motion as they experiment with subtle shifts in bodily positioning, muscular contraction and elongation to produce moments of precarious balance, e.g. turning one's head to the side or shifting more weight on to one foot than the other. Coincidentally, recent exercise physiology research supports explorations into varying levels of stability in strength training (Reeves, Narendra, & Cholewicki, 2007). In fact, Reeves et al. suggest that the concept of becoming more "robust" should replace intentions of becoming more "stable" (p. 268). In sum, rather than ask students to experience an exercise such as a wall-ball-squat with a generic bracing of the



Photo Gregory Clark

*Dr. Rebecca Lloyd's interdisciplinary research intertwines curriculum understanding, embodiment theory, and sport psychology as she philosophically and practically researches 'movement consciousness' across various disciplines in education as well as teacher education. Her current program of research, funded by the Social Sciences and Humanities Research Council of Canada, explores the phenomenon of "moving to learn" within a JungleSport school-based program. Through phenomenological observations, interviews, and analysis, she is in the process of refining a Merleau-Pontian inspired "Function to Flow Interdisciplinary Education Model" that details how one might become educated in an interdisciplinary sense through experiencing an alternative activity such as climbing.*

core and fixed alignment, they might explore varying levels of muscular tensions and softness in the core and musculature of the neck, feet and hands.

If HPE teachers introduce activities with opportunities for students to engage in an inner, sensory exploration, the focus on counting repetitions might shift to also include a fluid, suspended moment of in-between. Just like a musician brings out a heavenly quality in a sustained note using vibrato, educators may encourage students to sense wave-like ebbs and flows of muscle activation within each muscular repetition. In fact, if such a practice is adopted the notion of repetition is debunked as no two motions with enhanced sensitivity are exactly alike. The goal of assimilating motions in a cumulative count, e.g., 15 consecutive squats, shifts to exploring the nuances of sensation that make each movement alive and filled with new information. With such a shift, tendencies to treat the body like a machine in the way we teach fitness are dissolved as a fluid, enlivened practice has an opportunity to emerge (Lloyd & Smith, 2009).

An exploration of something as simple as a squat thus becomes not only an activity challenge, it

also serves an exemplar for revitalizing HRF. As Gintis (2007) puts it:

*Many people walk on treadmills in front of windows when they could be walking outside. Some people read a magazine or watch TV while they pump the stair-stepping machine... What is the purpose of encouraging dissociation in the name of doing something good for you? I question the motivation behind why we treat ourselves with this lack of respect. If we have so little interest and regard for our body while we exercise, it will translate into the quality of how we live the rest of our lives. (Gintis, 2007, p. 207)*

If we, as educators, are concerned about the qualitative features of the health-promoting habits we wish to formulate in the lives of students 'for life', we need to give thought to the sense of life that is experienced in the bouts of moderate to vigorous activities that we prescribe. As with the wall-ball-squat, we can transform the simplest of movements such as a walk or a run from mundane, muscular motions into meaningful explorations of a fitness continuum. Engaging in a range of such activities can make HRF a curriculum of vitality and vital engagement with others and the world (Lloyd & Smith, 2011).

#### References

- Conrad, E. (2007) *Life on land: The story of continuum*. Berkeley, CA: North Atlantic Books.
- Gintis, B. (2007). *Engaging the movement of life: Exploring health and embodiment through osteopathy and continuum*. Berkeley: North Atlantic Books.
- Lloyd, R. J., & Smith, S. J. (2011). Health-related fitness: Enlivening the physical education experience. In E. Singleton & A. Varpalotai (Eds.), *Pedagogy for the moving body: Establishing a community of inquiry for studies in human movement*. London, ON: The Althouse Press.
- Lloyd, R.J. and Smith, S.J. (2009). Enlivening the Curriculum of Health-Related Fitness. *Educational Insights*, 13(4).
- Merleau-Ponty, M. (1968). *The visible and the invisible*. (Alphonso Lingis, Trans.). Evanston, Illinois: Northwestern University Press.
- Reeves, N. P., Narendra, K. S., Cholewicki, J. (2007). Spine stability: The six blind men and the elephant. *Clinical Biomechanics* 22, 266–274.
- Resist-A-Ball (2008). Don't get behind in 2009! Make 2009 one Resist-A-Ball year with this great workout. *Can-Fit-Pro The Official Magazine of Canadian Fitness Professionals*, January/February issue, pp. 42-47.
- Welk, G. J. (2006). Strengthening the scientific basis of the FITNESSGRAM® program. *Journal of Physical Activity & Health*, 3(Suppl. 2), S1-S4.

# NATURAL MOVEMENT IN EARLY PHYSICAL LITERACY DEVELOPMENT

Dwayne P. Sheehan, PhD, Mount Royal University  
Larry Katz, PhD, University of Calgary

Physical literacy (PL), as part of a shift toward teaching fundamental movement skills (FMS) in children, is gaining increasing prominence in Canada. In this article we introduce an original movement development model that includes natural movement en route to skill competency and a positive attitude about physical activity (PA).

## Fostering Natural Movement with Children

Intentional free flowing movement is an important aspect of PL. The ongoing mastery of dexterous movement patterns generates motivation and a positive attitude about PA. Children who learn competency and confidence by having success with the basic skills, such as crawling, walking, or pedaling, are more likely to run, jump, and throw with proficiency (Higgs, et al., 2008). Natural movement is not simply a combination of movements that have been choreographed by a teacher, but the unstructured and skillful movement displayed by children when they first enter school. Children's ability to move freely without regard for mechanical or choreographed movement is the essence of natural movement.

Parents and care providers play critical roles in influencing young children to engage in unstructured or deliberate PA. Modeling natural movements and basic skills provides an environment rich in opportunities for healthy development. Children learn valuable life lessons while participating in PA, including the ability to cope with success and failure, resolving conflicts with others, and concepts of sharing. Exploring and risk-taking in a safe environment is essential to children's development.

As the initial psychomotor and social-emotional abilities are forming, unstructured experiences should be encouraged. Game play should be creative and constantly evolving with rules and objectives in a continuous state of flux. When the needs of the children change, so should the setting, equipment, and other elements of exploration and experimentation. If PL is to be learned by acquiring FMS, it should be done so initially as part of natural play. Children should perceive movement as an opportunity to express themselves free from the limitations of their daily routine. Constructing opportunities for infants and toddlers to move over,

through, and around obstacles promotes creative body expressions and encourages problem solving and the development of FMS. As such, parents and teachers should provide opportunities for children to be creative, expressive, and functional in their movement.

## Phases of Movement Development

The model proposed in Figure 1 represents the flow of phases associated with the development of competency when learning a new skill. Children should be exposed to as many different PA experiences as possible prior to puberty. Evidence suggests that when given the same amount instruction, the time taken to learn a skill after puberty is longer than before puberty (Balyi, Way, Cardinal, Norris, & Higgs, 2008). The Canadian Sport for Life expert group describes this as the period of optimal readiness (Higgs et al., 2008).

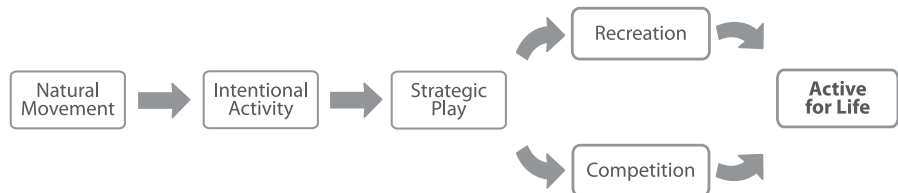


Figure 1 – Phases of Movement and Skill Development Model

The natural movement phase is a critically important step toward physical literacy by providing celebratory milestones that children build upon. Learning to stomp, clap, and walk as a functional task helps a child communicate well before they can speak. Spatial awareness and concepts related to effort help a toddler learn about their personal environment. Familiarity with themselves and their surroundings is a prerequisite to further discovery of unstructured movements such as bending, stretching, twisting, and turning. Each of these competencies will eventually lead to exploration by climbing, rolling, jumping, running, and other locomotor activities.

As children progress through the early grades in school, they transition from the natural movement phase of learning FMS to progressively more intricate and challenging tasks.

All children do not develop motor skills at the same pace and will likely be at different phases of their transition at any given moment. The test for any



Photo Dwayne P. Sheehan



**Dr. Dwayne Sheehan** – After 19 years of teaching physical education in the K-12 system, Dwayne joined the Department of Physical Education and Recreation Studies at Mount Royal University in 2008. Dwayne is passionate about assisting young physical educators in their pursuit of a teaching credential. His pedagogical approach to instructing is grounded in his past experiences and ongoing professional development. He is a Past President of the Alberta Health and Physical Education Council (HPEC) and served a two year term as President of the Alberta Schools Athletic Association (ASAA). He is also a past recipient of the CAHPERD (PHE Canada) Young Professional Award.

**Dr. Larry Katz** is a Professor and Director of the Sport Technology Research Laboratory at the University of Calgary, Faculty of Kinesiology. In addition to being an award-winning developer and producer of interactive multimedia applications, he is also an Educational Psychologist interested in how to improve human performance through the use of technology. He is particularly interested in individualized learning, learning integration, personalized assessment, and motivating students to recapture their preschool enthusiasm for moving and learning. Dr. Katz's visionary skills have been demonstrated extensively with his ability to attract top researchers to numerous collaborative projects that he has initiated.

teacher responsible for early PL development is to create experiences with multiple levels of difficulty and opportunities for all children to be challenged. A learning environment rich with movement experiences can lead to enhanced long-term motor, cognitive, emotional, and social development (National Association for Sport and Physical Education, 2009).

The transference of fundamental skills relies heavily on the acquisition of basic movement competencies during the early years of schooling. The conscious motion evident during the activity phase is intentional and deliberate and usually related to a task or objective. For example, children might be wondering: 1) Can I jump through this hopscotch course? 2) Can I swing all the way across these bars? 3) Can I shoot the puck while skating?

The two key components to a successful movement program are ensuring that the children are having fun and that their activities are based on core principles of motor skill development such as agility, balance, and coordination (Garcia et al., 2002). The intentional activity phase is not void of experimentation and additional discovery. For example, learning to balance on a scooter builds on the ability to balance on one foot at different levels while making various shapes.

Learning the primary movement skills, the

development of movement patterns, and the refining of basic motor skills is a characteristic of the intentional activity phase. Mastery of movement fundamentals establishes a foundation that facilitates continued motor skill acquisition and the potential for advanced levels of performance that enhance the likelihood of daily PA (National Association for Sport and Physical Education, 2009). Children eventually transition to a more strategic phase of development as they become proficient and confident in performing particular movement skills. During this phase, children think tactically about what their body is doing relative to others and their environment. Movement sequences become more instinctual and can be used in various team sports and individual activities.

The strategic play phase of development is a consolidation of a variety of movement skills that are acquired through experiences that occur in and out of school. This segment of the learning continuum is where the characteristics of PL are evident. Children are learning to move with poise and efficiency and are capable of understanding and analyzing different forms of movement (Physical and Health Education Canada, 2009). A sound working knowledge of the movement theory and best practice previously described will help teachers create unique, challenging, and developmentally appropriate learning experiences (National Association for Sport and Physical Education, 2009).

#### References

- Balyi, I., Way, R., Cardinal, C., Norris, S., & Higgs, C. (2008). *Long term athlete development resource paper V2*. Vancouver, BC: Canadian Sport Centres.
- Garcia, C., Garcia, L., Floyd, J., & Lawson, J. (2002). Improving public health through early childhood movement programs. *JOPERD: The Journal of Physical Education, Recreation & Dance*, 73(1), 27-31;53.
- Higgs, C., Balyi, I., Way, R., Cardinal, C., Norris, S., & Bluehardt, M. (2008). *Developing physical literacy: A guide for parent of children ages 0 to 12* (Supplement to Canadian Sport For Life). Vancouver, B.C.: Canadian Sport Centres.
- National Association for Sport and Physical Education. (2009). *Appropriate practices in movement programs for children ages 3-5* (Position statement). Reston, VA: NASPE.
- Physical and Health Education Canada. (2009). *What is physical literacy*. Retrieved 3/20/2010, 2010, from [http://www.pheducanada.ca/developingphysicalliteracy/e/whatis\\_pl/](http://www.pheducanada.ca/developingphysicalliteracy/e/whatis_pl/)

# THE EDUCATION REVIEW



uOttawa

Faculté d'éducation  
Faculty of Education

The uOttawa Education Review is a thematic bi-annual publication of the Faculty of Education.

© 2011 University of Ottawa, Faculty of Education.

Unauthorized reproduction in whole or in part is prohibited.

**Senior Editor**

*David Smith, vice-dean (Research)*  
Faculty of Education  
University of Ottawa

**Guest Editor**

*Rebecca Lloyd, PhD,*  
Faculty of Education

**Subscription**

The uOttawa Education Review is offered free of charge in PDF format at [www.uottawa.ca/education](http://www.uottawa.ca/education); it is also delivered in bulk, free of charge, to select locations.

The Review is an initiative of the vice-dean (Research).

ISSN# 1925-5497

**For questions, inquiries and comments**

*Anne-Sophie Ducellier*  
Manager, Marketing and Communications  
Faculty of Education  
[anne-sophie.ducellier@uottawa.ca](mailto:anne-sophie.ducellier@uottawa.ca)  
Tel.: 613-562-5800, ext. 4941  
145 Jean-Jacques-Lussier St.  
Ottawa ON Canada K1N 6N5  
[www.uOttawa.ca](http://www.uOttawa.ca)