

Chapter Eight

Health-Related Fitness: Enlivening the Physical Education Experience

Secondary (high school) physical and health education curricula, both in Canada and the United States, aim to provide students with the knowledge, skills and attitudes that will lead them to live active and healthy lives (for example, see Alberta Education 2008; Ontario Health & Physical Education 2000; British Columbia Ministry of Education 2006; National Association for Sport and Physical Education 2010; Rink 2006). Due to the recent public concern for the inactivity, obesity and associated health risks affecting children and youth, this educational aim to prepare students for healthy lifestyles has been sharpened (Gibbons and Naylor 2007; McManes 2007). The curricula of secondary physical and health education programs have thus been broadened to address this renewed aim of orienting students towards active and healthy lifestyles. Physical activities that were once considered ‘alternative,’ such as weight-training, aerobics, yoga, Pilates, running, and cross-country skiing (Lloyd 2007) have become more apparent. As the authors of this chapter, we argue that while the theoretical underpinnings associated with the promotion of students’ physical activity and the programming aimed at increasing their levels of health-related fitness aim to improve students’ overall healthy lifestyles, they do not in fact achieve these outcomes. In what follows, we approach the pedagogical dimension of health-related fitness (also commonly referred to as “HRF”) with a sense of social justice for the ‘bodies’ (students) on which physiological measures (such as fat-to-muscle ratios or breaths-per-minute rates during exercise) are inscribed. With this in mind, we dedicate this chapter to exploring how health-related fitness may be understood and implemented beyond the mechanistic realm of simply moving the body ‘harder,’ ‘faster,’ or more ‘efficiently’ for the sake of ‘getting fit’. We pay particular attention to the *lived-body*

experience of movement (inspired by the phenomenology of Maurice Merleau-Ponty 1962; 1968) and propose that a kinesthetic (ability to perceive and feel the movements of the body), feeling approach of becoming healthy and active would productively frame both the curricular understanding and pedagogical praxis of health-related fitness. In linking our gravitation towards the affective (emotional) domain to a larger community of inquiry beyond health and fitness, we are inspired by the words of Paulo Freire who describes his pedagogy as a pedagogy of happiness, “laughter, of questioning, or curiosity, of seeing the future through the present, a pedagogy that believes in the possibility of the transformation of the world” (Gadotti 1994 as cited in McLaren 2007, 320). We therefore aim to expand upon the physiological dimension of health-related fitness (HRF), which constitutes its dominant discourse. We aspire to inspire students to become critically, somatically (bodily) and even passionately engaged and alive, hence “enlivened” as they experience a curriculum of HRF that hopefully urges them to make steps towards transforming their world of physical inactivity. What distinguishes our approach to enlivening the physical education experience from Paulo Freire’s pedagogy – and any other pedagogy for that matter – is how we contextualize the momentary events that comprise a joyful yet thoughtful pedagogical interaction in and through movement (for example, ‘feeling in the moment’ of a balanced yoga pose with flowing breath). Unlike many educational theories that lean towards cognitive registers of disembodied thought, the vitality approach to which we ascribe situates cognitive processes *within* movement rather than outside of it, which Maxine Sheets-Johnstone (1999) describes as the rightful place. Students and teachers who become bodily enlivened through an enlivened curriculum of health-related fitness (herein referred to as HRF) are more likely to move with enhanced consciousness in ways that can be described as “mature” (Levin 1985), “fluid” (Lloyd and Smith 2006) and somatically alive. An enlivened HRF curriculum will take students well beyond the realm of the simple mechanistic fitness experiences so often found in secondary level curriculum, far beyond ‘one more chin-up,’ ‘five seconds

faster,' or 'three pounds lighter' that, for some students, come to define the secondary health and fitness learning experience.

We therefore accept AND challenge current conceptions of HRF as we delve beneath the traditional cognitive (thinking to move the body), psychomotor (mechanical movement of the body), and affective (feeling the body move) domains that are drawn upon in existing physical education curricular models (Rink 2006; Metzler 2005). We introduce the *kinesthetic domain* of movement consciousness where sensation, perception, and expression are prioritized – an experiential domain that has been largely overlooked in the field of physical education (Myers 1998). Based on the principles of “vitality” (Smith and Lloyd 2006) and “interactive flow in exercise pedagogy” (Lloyd and Smith 2006a), we provide in this chapter an “enlivening” HRF framework that enables teachers to understand, nurture and assess movement maturation in fitness activities as well as in games, dance, gymnastics, and sports.

Health-Related Fitness VS Physical Education Pedagogy

There exist many school-based programs and interventions that promote health and physical activity (Kahn et al. 2002; Lounsbury, Gast, and Smith 2005; Rabin et al. 2006; Saunders et al. 2006; Stanley et al. 2006; Woods and Weasmer 2006). Yet, teachers lack the training to introduce HRF activity (Kulinna et al. 2008; Bechtel and O'Sullivan 2006; Bechtel and O'Sullivan 2007; Housner et al. 2008; Martin et al. 2008), especially in a way that draws upon the qualitative features of becoming physically educated through HRF activity (Smith and Lloyd 2007). We attribute this lack of pedagogical HRF expertise to the fact that many physical education teachers are trained in the sports education model, where learning is tied to acquiring sport-specific skills and playing games (Kulinna et al. 2008; Overdorf 2005). For example, students would be taught the volleyball-specific skills of 'bumping' or 'spiking' the ball. But

they might not be taught the qualitative features of feeling joy as they make a successful serve over the net, or the feeling of ‘being in the flow’ as they execute a series of fluid passes to their teammates. As a result, understanding the process of becoming physically educated in the HRF context presents a challenge. Teachers require extensive mentoring to teach towards curricular revisions (Ha et al. 2008; Keay 2006) that include HRF as well as sports-based approaches to teaching fitness. Also, a conceptual link is needed to create a bridge between effective sport-based teaching and HRF-based pedagogy to facilitate teachers’ future professional development in physical and health education.

The perpetuation of HRF activity and assessment as being conceptually distinct from activity that is considered to be physically educative is directly linked to the ‘disciplinary disconnect’ evident within kinesiology and teacher education university programs (Corbin and McKenzie 2008). With the aim “to develop a more ‘scientific’ disciplinary base for physical education” that can be traced back to the 1950s, the quality of the movement experience is often neglected in health and physical education curriculum, and not enough attention is paid to “what future teachers will actually teach” (Corbin and McKenzie 2008, 47-49).

Physical activity studied and understood from an exercise science perspective differs significantly from physical activity viewed from a pedagogical perspective. The former gives preference to the external body that performs a physical activity – a body that can be reduced to proportions of muscle to fat, a body supported by a skeletal frame (Smith and Lloyd 2007). The latter gives preference to the person (and his or her feelings and emotions) who experiences a physical activity. This conceptual divide perpetuates mechanistic assumptions of the body and the body in motion, such as the definition of physical activity as being understood as “an

expenditure of energy” (Fishburne and Hickson 2005). Such mind and body distinctions can be traced back to Descartes, when “various types of human experience [were reduced to] to the mechanical interactions of the body, i.e., to physics” (Welton 1999, 2-3).

Implementing and assessing physical activity based on a Cartesian dualism (the mind-body split), where the physiological components of HRF such as cardiovascular fitness, muscular strength, flexibility and endurance take precedence (Charles, Pangrazi, and Franks 2000), is useful in promoting children’s health (Cheung, Chow, and Parfitt 2008; Martin et al. 2008; McCaughtry 2008; Welk 2006; Plowman et al. 2006). However, if we are to expand curricular and pedagogical understandings of what it means to become physically educated through HRF activity, we must broaden such quantitative approaches towards the implementation and assessment of HRF practices to include qualitative measures of the feelings, moods, emotions, vitalities and experiences of motion that characterize becoming fit and healthy.

Certainly, the motive for emphasizing fitness-producing HRF activities is a worthy one, especially in terms of helping students who aren’t necessarily star athletes to improve their fitness. Separating cardiovascular fitness, muscular strength, flexibility and endurance from factors related to higher-performance-related fitness such as “agility, balance, coordination, power, speed, and reaction time” (Charles, Pangrazi, and Franks 2000; Gallahue and Donnelly 2003), provides less-fit students with opportunities to engage in low skilled movement patterns for prolonged periods of time. This type of fitness programming can then be assessed by teachers using fitness and physical activity tests and award programs, such as the Fitnessgram, the President’s Challenge, and the YMCA youth fitness test – all of which quantify primarily physiological fitness gains (Keating 2003).

But, this exclusive emphasis on quantitative, physiological indices leaves little room for purposive, extensive and expansive curricular elaboration. Many continuing education workshops are available to physical education teachers that teach how to integrate fitness concepts within sport-skill units¹. Nevertheless, the quantitative aspects of moderate and vigorous movement, such as how many minutes or repetitions a movement is performed within a specified heart rate zone, remain the focus. “What appears to be missing qualitatively are the connections between exercise counts and what ultimately counts in achieving a state of active and healthy living” (Smith and Lloyd 2007, 67).

In what follows, we depart from the quantification of movement in purely physiological or mechanistic terms and seek instead to help students sense the inherent and joyful meaning of movement. In doing so, we indicate how physical education may contribute to *meaningful learning experiences*, rather than simply helping students’ bodies ‘get fit’. Our focus for the remaining portion of this chapter is thus to broaden current conceptions of health as they pertain to fitness in order to enliven the experiences of HRF in secondary physical education.

Reconceptualizing Health-Related Fitness

Joseph J. Schwab, a curricular specialist in the late 1960s and early 70s, declared the field of education to be “moribund” as “The Tyler Rationale, conceived as a rational scheme for curriculum development, had become the rationale for narrow, behavioristic conceptions which reduced curriculum to objectives and outcomes” (Pinar et al 2000, 177). Similarly, health-related fitness (HRF), with its narrowly defined objectives and outcomes, carries much of what Schwab attributed to moribund, dead or lifeless curricula. Active and healthy living, as a ‘living curriculum’ or ‘curriculum vitae,’ is reduced in current curricular approaches to anatomical and

physiological representations that leave out the *meaning* and *feeling* of health and fitness-related physical activity.

To illustrate this point, let us consider the experiences of two high school boys who take an HRF test used in present-day classrooms. This test can be traced back to numeric methods of assessing fitness that have evolved from the Kraus-Weber physical test developed in 1954, a test which highlighted the “poor performance of American youth” (Keating, Silverman, and Kulinna 2002, 194). Consider the following scenario, in which Ian and Bill, two Grade 11 students, perform their fitness test:

Ian walks into his Grade 11 “Healthy Active Living Education” class to hear his teacher’s announcement, “We are going to test your Health-Related Fitness today. This will give us an indication of where you are so that you can set appropriate goals and design a personal fitness program for the rest of the term.”

“Gulp.” Ian’s mouth goes dry as he contemplates his current state of fitness. He knows he has been active over the summer as he thinks to himself, ‘Riding the technical trails in the Gatineau Park near my house must count. Right?’ For an instant, Ian is transported back in time, recalling a dark looming figure emerging in the horizon of the trees ahead... As his front bike wheel swerves around the rock that partially blocks his vision, he sees, in broad daylight, the dog-like sniffing of a bear that is happily readjusting his comfortable recline in the warm summer sun. They exchange looks, each one feeling quite at home—bear beside the rock, Ian on his bike— and take each other in with a gaze that stops time. Ian’s pulse suddenly begins to rise, not from a training effect such as running laps in the gym, but from the anxious, adrenaline-fuelled realization that

it is time to delicately keep moving away from his ursine encounter. He effortlessly glides up the steep part of the trail ahead, looking for his nearby friends to share his marvellous find.

“So that’s what you can expect today class. Any questions?” summarises Mr. Percival. ‘Whoops,’ thinks Ian. Luckily the students are grouped in partners and he can be filled in on what to do. With a discrete lowering and tilt of his head, Ian looks over to his friend Bill. A reciprocal nod in slow motion brings the two ‘boyz’ together as they saunter in the direction of the “Body Composition” station that has been set up by their teacher. “Hmmm, do my ear piercings count in the inventory or are they extra?” asks Bill with deliberate sarcasm. As Ian thinks of what he has been endowed with and opens his mouth to brag about his “composition,” the gleam of metal tweezer-like pinchers catches his eye. The metal implement clasps the barely palpable squishy layer of what Mr. Percival is describing as ‘adipose tissue’ found on Bobby’s, Ian’s classmate, 90-degree-angled arm. The sight instantly clears Ian’s mind of snarky comments, replaced instead with a trepid anticipation. ‘Bobby’s a football player, an avid weight lifter and *still* look what Mr. Percival can pinch,’ thinks Ian, wondering about his own score. He knows that he has enough muscle to stabilize his bike and power up the steeper portions of the Gatineau Park trails, but his arms are puny compared to the pipes on Bobby.

Just as the embarrassment subsides from Ian’s obligatory step onto the scale, paired with the prods and pinches of his extremity and torso skin folds that Bill and Ian measure and log, Mr. Percival’s whistle reminds them that there is more to come. As they approach the next station, the heavy, strident exhalations of the students leaving the “Beep Test” are still audible. ‘Hey, this isn’t so bad,’ thinks Ian as he begins moving

back and forth between the lines marked on the floor, set at a distance of 20 meters apart. Both Ian and Bill effortlessly keep pace with the initial intervals, signalled by loud beeps squawked by a CD player. “Rhythm comes naturally to me,” laughs Bill as he bobs his fist with a double punch exclamation. “Too bad it keeps changing,” retorts Ian. The comfortable pace gradually transforms into a sensation of tightening in the boys’ chests, hips and calves. ‘At what point do I stop trying to hang on?’ wonders Ian as he runs beside his buddy. With exasperation, he knows it is no longer a decision he can make – his body has made it for him. The rhythm has caught him, outsmarted him and orchestrated a different pace reserved for the elite athletes in the class. Even divided into small groups, it is evident who can keep going with the fast-paced beeps and who cannot. Heart racing, shirt plastered to his back with sweat, and feeling his ego bruised and defeated, Ian admits to himself he can’t keep up with the intervals.

Next is the “Curl-up” station, which feels very fitting, since all Ian wants to do is curl over, catch his breath for awhile and chill out. Luckily, Bill lays on the mat first to start curls, so Ian willingly takes the break, kneels behind him and cups his hands under Bill’s head to create a supportive space hold. “Up-2-3, down-2-3,” Ian chants as Bill curls his torso and reaches his hands towards his knees.

‘Twenty-three...the number to match,’ thinks Ian as he takes his position on the mat after Bill and begins to curl one sit-up at a time, “One, two, three...”

The “Trunk Lift” station is a welcome change. “I think I’m just going to pass out here for awhile” says Ian as he assumes a comfortable prone position on the nearby mat. “Come on...you gotta lift your head off the mat,” jokes Bill as he estimates the inches cleared between his friend’s torso and the floor. ‘This one needs improvement,’ thinks

Ian as he returns to his relaxed position and gazes around the room, seeing the “Push-up” and “Back-saver Sit and Reach” stations ahead. ‘Maybe I’ll just stay here awhile longer,’ dreams Ian as he closes his eyes again, wishing he were somewhere else. In his mind, he is back on his bike and jumping over a log intersecting the path ahead until -

“Tooooooot!” The shrill whistle reminds Ian the ordeal isn’t over yet...

Ian’s experience of health-related fitness (HRF) assessment, specifically with regards to the goals he will be encouraged to set and the personal fitness program he will be responsible for designing, provides much room for curricular contemplation. Will Ian be encouraged to engage in cardiovascular activities designed to maximize the progressive speed and agility required to run back and forth between lines during the “Beep Test,” or spend more time doing what he loves to do, which is to ride his bike? Will his personalized strength training program be based on improving his score so that he can do more sit-ups and push-ups consecutively on his next test, or designed to offer him a chance to balance his aerodynamic posture, an accentuated kyphosis (rounded spine) typical of many avid cyclists? What we are considering by asking these questions is the degree to which joy and vitality may be felt in the process of becoming fit and, conversely, the implications of performing repetitious movement (i.e. sit-ups or push-ups) that may take away from bodily components of vitality in the long run rather than accentuating them.

We ask these questions because our assessment of health-related fitness (HRF) informs the prescriptive, day-to-day experience of secondary students becoming more fit, strong and flexible, as well as the individual programs they are asked to design (Keating 2003). Instead of understanding how the body works as a whole and addressing symmetry, postural and positional

awareness when individualizing a student's workout plan, by subscribing to the limitations of a mechanistic model teachers are encouraged to praise mindless motions, provided they can record quantitative gains over time (i.e. a student can perform six sit-ups at the start of the term and 12 sit-ups at the end of the term). This becomes evident in the 'exemplars' provided in the Ontario curriculum for Health and Physical Education (2008) which indicate a strong affiliation to mechanistic understandings of the body. Examples of a "healthy living action plan" are provided for various grade levels in order to give teachers an idea how to assess fitness-related plans and progress. The highest scoring 'exemplar' clearly indicates the importance of making quantitative improvements on the health-related fitness test scores. The Grade 11 student writes, "I will stretch before each workout for 5 minutes, do 15 push-ups to start, and gradually increase the number of reps" (Ontario Ministry of Education 2008, 2). If we continue to implement fitness with curricular models based on "personalized system(s) for instruction" (Metzler 2005, 180), i.e., asking students to create their own action plans, and continue to applaud segmented and unbalanced strength gains and dated practices of stretching before one has completed a dynamic warm-up, we may very well be leading students away from the "*corporeal* constitution of active and healthy living" (Smith and Lloyd 2006, 250).

We propose, in the following section, an approach to teaching HRF that enlivens the core components of HRF assessment, and provides suggestions for the re-design of students' healthy living plans.

Body Composition

Ian's and his friend's experiences of body composition assessment draw them towards the objective body, or what Edmund Husserl named "*Körper*" (Welton 1999, 4), whose attributes can be quantifiably measured. The jokes offered by the boys and the tests themselves, in this case skin folds and BMI (body mass index) measures, assume the body to be nothing more than a collection of parts with a muscle-to-fat ratio and a boney frame. No attention is paid to sensing a living presence within these measures – how the person within feels about their muscles, fat and frame. Elsewhere, we have noted that girth, BMI or skin fold indices:

...do not disclose the interconnections of the skeletal-muscular, organ/endocrine, nervous and fluid systems of the body and, specifically, how "tissue fluid is the foundation of vitality and flow of power through the muscles" (Cohen 1993, 15), how organ tone can work in concert with the bones and muscles to give vitality to bodily expression (28-53), or even how the percentage of body fat is only significant when discriminating between "static fat" which is "stored as repressed or unacknowledged potential power and [which] creates a sense of heaviness and lethargy" and "mobilized fat" which "expresses strong primordial power and a sense of graceful fluidity" (4). (Smith and Lloyd 2007, 70)

The underlying assumption is that "fat" or adipose tissue is a single entity that one must lose, while muscle is tissue that we must tone or harden. In terms of promoting a sense of vitality in relation to these objective measures, we might look to the cautionary advice of Glen Mazis who suggests that in the process of "hardening our bodies [...] in every sensory solicitation, we manage to become dead while still being alive in some very real sense" (Mazis 2002, 54). In other words, we neglect what is

below the surface – our sensory experience, our ‘living body’ – if we act simply on a body composition removed from its experiential, compositional properties.

Accordingly, we might delve beneath objective references to the body and ask students to explore sensations within their bodies. Assessments of composition may also include somatic (bodily) knowledge of anatomy – a body of knowledge ironically based on bodies whose owners have “vacated the premises” (Pronger 1995, 438) – in relation to observing and sensing one’s posture. Here we borrow from the somatic approach advocated by “the leading edge of bodywork technology because of the way it educates [students] to sense, feel, and move with new awareness and freedom” (Dreaver and Provasoli 1999). By following the chart provided in Figure 1, for example, students working within partnerships can be taught to see placements of the chin, shoulders, rib cage, hips, knees, and feet in relation to the ideal plum line posture from different perspectives and begin to cognitively and somatically understand why deviations from a neutralⁱⁱ carriage of the spine, such as rounded upper backs, protruding chins and pelvic tilts, subtly block innervations and are related (in many cases) to the way we hold ourselves in everyday life.

We can ask students to accentuate the feeling of alignment by lying on the floor. They can be asked to perform a scan of the bony reference points on the head, shoulders, scapulae, rib cage, pelvis, knees, and feet in relation to weight-bearing symmetry and sense which muscles might be overly tight or relaxed. According to Warren Hammer (1999), a leading soft tissue examination and treatment specialist, the following postural muscle groups are prone to excessive tightness: gastrosoleus, tibialis posterior, short hip adductors, hamstrings, rectus femoris, Iliopsoas, tensor fascia latae, piriformis, paravertebral back extensors, quadratus lumborum, pectoralis major, upper trapezius, levator scapulae, sternocleidomastoid, and the

flexors of the upper limb. Muscle groups prone to weakness include the: peronei, tibialis anterior, vastus medialis and lateralis, gluteus maximus, medius and minimus, rectus abdominus, serratus anterior, rhomboids, lower trapezius, short cervical flexors, extensors of the upper limb, and the scalenes. We recognize that awareness of these muscle groups may be challenging for individuals who are not familiar with anatomical terms, especially for high school students or even their teachers. To help visualize how these areas of tightness and weakness work in patterns, Hammer (1999) describes two common postural imbalances: (a) the “shoulder (proximal) crossed syndrome” where there is “elevation and protraction of the shoulders and a forward head posture” and (b) the “pelvic crossed syndrome” where weak abdominals and gluteus maximus muscles and tight iliopsoas (hip flexor) and erector spinae muscles cause a forward or anterior tipping of the pelvis (417-418). In somatic terms, Hanna describes these two postures in terms of (a) the “red light” or “startle reflex, a fear, or withdrawal response in which we instinctively hunch forward to try to protect ourselves” and (b) the “green light reflex” which is “caused by the tightening of the muscles in the back of the body” as we “arch up and back slightly as we prepare to move into action” (Dreaver and Provasoli 1999, 396). Without intervention, these common imbalances may lead to reduced range of motion and stiffness, soreness and pain, vertebral subluxation, fatigue, energy loss and weakness, premature aging, and increased susceptibility to injury (Dreaver and Provasoli 1999, 396-397). If we are to nurture the corporeal constitution of health, therefore, there is a need for students to become somatically aware of their postures and how they relate to the development of healthy living action plans.

Let’s now return to Ian who has a tendency to carry the bike-riding posture of a rounded spine into his lying, sitting, standing positions in his day-to-day life. What a cyclist like Ian might discover as he feels his posture against the floor is that his shoulders do not feel wide and

flat to his back because his tight, short and inflexible pectoral muscles are responsible for pulling them forward. His head feels more comfortable with a pillow underneath since he feels a stretch behind his neck in its absence. So when Ian is encouraged to design a program to become ‘fit’ for a lifetime, he needs to take into account how his strengthening, flexing and cardiovascular conditioning program ‘fits’ his developmental needs. The health benefits of connecting to a tension-free upright (not uptight) posture are vast in that he will alleviate continual compression on a chest cavity that contains his vital organs (something worth considering given the current prevalence of heart dis-ease).

Ian might also consider the affective benefits of exploring the connection between position and disposition. By gradually encouraging students like Ian to let go of tensions that are rounding them forward, they may very well be able to let go of the ‘weight of the world’ they figuratively may be carrying on their shoulders and open themselves up to primordial sensations of vitality that a neutral, elongated spine, at its innermost core, maintains (Myers 2001).

“Alignment” writes Will Johnson (2000) “is not something that you want to force upon your body. Alignment is a condition that you want to feel into” (38). Postural and body compositional tests serve only a starting purpose of having us attend to a way of standing, an attitude of moving, and a propensity to carry or bear one’s own body into pleasurable domains of movement.

An enhanced kinesthetic sense of our body composition carries knowledge, most often learned through anatomical reference points, into somatic postural, positional, gestural and expressive movement modes. Certainly students are better prepared to align themselves for movement that can now be enhanced by cardiovascular conditioning, the development of muscular strength and endurance, as well as increased flexibility. We shall now consider how

these other components of health-related fitness (HRF) contribute to a broader sense of becoming physically educated by indicating “how somatic sensibilities change when one moves and how objective measures of the external body thereby come to life” (Smith and Lloyd 2007, 75).

Cardiovascular Fitness

Cardiovascular fitness is typically assessed in secondary school programs through distance covered within intervals of time in tests such as the Fitnessgram PACER test, the one mile run/walk test, or the President’s Challenge 1/4 –1 mile walk/run test (as described by Keating 2003,144). In such assessments there is no indication of movement quality (i.e. the student feels extremely exhausted and miserable, or very energized and happy) and the degree of extraneous tension one holds in an aberrant posture (i.e. leaning too far forward when running and straining the back, or adopting a flat-footed gait than puts strain on the knees) is overlooked. Yet, according to Maxine Sheets-Johnstone (1999), every motion has a degree of felt tension, a rhythm, an amplitude, a projection and a corresponding emotion or affect (Sheets-Johnstone 1999, 257). A walk or a jog, for example, can be effortless, uplifting and invigorating, as would be evident in the upright carriage of the body (Smith and Lloyd 2007) and the fluid quality of the movement pattern. If jogging were taxing, or worse, absolute drudgery, the negative effects of the movement experience would most likely be conveyed in the downcast position of the jogger’s head, a sway upper back and an audible and visual heaviness in the thumping of the jogger’s feet as they impact the ground with each stride. Accordingly, if we ask students to adjust the pace of their movements from a walk to a jog to an all-out run (as in the BEEP or PACER test) without acknowledgement of the accompanying tensional, postural and emotional

projections this entails, the amplitude of the experience may become more negative than positive.

To experience 'joy in motion,' when walking, jogging or in any other movement for that matter, one must understand how emotion and motion are integrally related. Emotion is classically understood outside the temporal register with little regard for how emotions emerge, swell, peak and fade over time. Typically, an emotion is understood as a reflective state, one that is seemingly still and categorical in the Darwinian sense, e.g., states of happiness, interest, surprise, anger, and so on (Stern 1993; 2002; 2004). Mihaly Csikszentmihalyi, a motivational psychologist who has written about flow – the state of optimal experience in sport, art, work, and daily life – also separates emotion from engaging movement experiences. In the following excerpt from his 1997 text, he describes happiness as emotional circumspection and a distraction rather than an active part of flow:

When we are in flow, we are not happy because to experience happiness we must focus on our inner states, and that would take away attention from the task at hand... Only after the task is completed do we have the leisure to look back on what has happened, and then we are flooded with gratitude for the excellence of that experience -- in retrospect, we are happy. (Csikszentmihalyi 1997, 32)

Similarly, Scott Kretchmar (2005) describes delight as “a condition of rest, of fulfillment” (205). Both Csikszentmihalyi and Kretchmar suggest that emotion, as happiness or delight, is a reflective state that occurs when the activity is over, rather than being integral to the motion itself.

Daniel Stern's (1993; 2002; 2004) notion of "vitality affects," however, helps us reunite emotion and motion in an expanded sense of cardiovascular capacity. Stern fleshes out the micro moments that can account for "small momentary events that make up our worlds of experience" (Stern 2004, xi). For example, rather than focus on the "categorical affect" of joy or happiness as a reflective state, he analyses the presence, absence and nature of "vitality affects" in physical expression. He explains that a "smile [for example] can 'explode' or 'dawn' or 'fade'" (Stern 1993, 206) and the "difference between them lies, in part, in their temporal contours" (Stern 2004, 63). Such awareness can differentiate a plastic, almost stagnant smile from one that is genuinely bursting with enthusiasm. If we extend Stern's notion of "vitality affects" to the process of becoming both fit and physically educated, we can begin to notice the emotion present in every gesture or movement pattern, whether running, biking, skipping, or some such fitness-enhancing activity.

We return to our example of helping Ian design a healthy living action plan that contains the joy he feels while riding his bike. Rather than daydream about bike riding while performing tedious fitness tasks in the school gym, he can be asked to articulate his physical experience of joy while riding the wooded trails of Gatineau Park. He can be asked to consider and describe how his feelings change with the varied terrain, noting his breath cadence, sense of lightness, ease, or the tensions in his postures throughout his ride, and to consider what sustains and depletes his feeling of flow (Csikszentmihalyi 2000) or positive energy while he bikes.

Ian can be encouraged to transfer the pleasurable feelings of exertion he experiences on his bike to the qualitative features of his running stride when 'sampling' alternative cardiovascular activities, rather than remaining within the confines of numerically assessing distance or time within a running program such as the Beep Test. Just as avid cyclists can

typically feel the circular motion of pulling back and up in rounding out a pedal stroke, Ian can be encouraged to focus on the propulsion phase of his run with similar sensitivity. Similarly, as Ian feels the ease in his handlebar grip and relaxation in his upper trapezius (lower neck and upper shoulder) muscles while enduring a challenging ride, he can apply the same sensation of upper body relaxation, including relaxed palms, and elbows that glide or swish effortlessly near the torso, in his running. The felt tensions as well as the overall amplitude and pace within a meaningful motion such as Ian's bike ride can be nurtured within any movement pattern – even the Beep Test in the school gymnasium – to recreate the desirable vitality affects of joy.

The sensitivity required to recognize and perceive “vitality affects” is not common practice, nor necessarily easy for the physical educator, let alone the students themselves. According to Thomas Myers (1998), student of Drs. Ida Rolf, Moshe Feldenkrais, and Buckminster Fuller and a leader in applying principles of bodywork to practitioners, there is a vital need to cure the numbness, what he labels “kinesthetic dystonia,” we are currently experiencing as a culture. Even more alarmingly, we are experiencing this numbness in our physical education classes, where, “for the majority of students, training in movement, in the intricacies of the felt sense of the body, or even the ability to touch sensitively is near nil” (Myers 1998,103). We need to make students aware of the kinesthetically “dystonic,” the “numbing” characteristics of cardiovascular fitness. In doing so, we can help them connect to their breathing as more than just a strenuous ‘in and out’ labour of fitness endured for the sake of boosting heart rate and working the lungs. Helping students consider their breath during exercise with sensitivity, with “vitality affects” in mind, will lead students to see a capacity for inhalation and exhalation that is not tiring or even unpleasant, but that can be enlivening, inspiring and that connects them to a joyful rather than labored breath. According to Olson (2002), it is through

the breath that one can perceive and understand interconnections between Self, Other, and the world at large. Sensing the postures, positions, gestures and expressions of breath in a range of cardiovascular activities may be a good place to start.

Students (on their own time or during a lesson) can become more bodily aware of breath through static visual and somatic analyses of posture. In becoming more aware of their breath, they can thereby carry forward an enhanced cardiovascular capacity, i.e., the sensation of bones and muscles as they activate into movement patterns and pairings of faster paced physical activity, such as moving from a slow jog into a sprint. Cohen (1993), for example, suggests we begin to feel the difference between movement that is initiated by specific boney structures, muscles, or organ sensibility, i.e., to “move from their rib cage, with their hands on the bones,[then] move from the muscles [within] the rib cage” (10). What we discover is that bone-initiated movement is comparatively more rigid than fluid muscle or organ-inspired movement. Students can come to see and sense such differences between rigid and fluid activations of movement. Through appropriate questions, verbal cues, and imagery, as well as the interactive gestures described in Lloyd and Smith’s (2006) exploration of interactive flow in exercise pedagogy, it is possible for a teacher to enhance the quality of the student’s exercise experience. Guiding the process of a student becoming cardiovascularly fit requires, in other words, a departure from the traditional, detached approach to monitoring quantitatively-based workout logs or fitness plans. It requires an appreciation of, and connection to, the student’s experience of becoming physically fit through a progression of activities that connect motions taught to emotions desired.

In fact, joy-in-motion is enhanced as movement patterns mature and shift from being effortful to effortless. This change in ‘cardiovascular fitness’ is visible “in the rhythms of bodily motion” (Laban and Lawrence 1974, 2) that are patterned on the breath. Cardiovascular fitness is about oxygen uptakes and recovery times, however it is also about the capacity for joyful movement that the rhythms of breathing literally inspire.

Muscular Strength, Endurance and Flexibility

A focus on breath is necessary in an expanded approach towards health-related fitness (HRF), but alone is insufficient. If our goal is to cultivate the corporeal constitution of joy in movement so that students may be motivated to engage in health-promoting physical activity for a lifetime, we must also consider the foundational strengthening and flexibility movements that prepare one to move with ease and grace in “flow motion” (Lloyd and Smith 2006b). Looking back to Ian’s experience of HRF assessment, we might consider the experiential implications of numerically tracking sit-ups and push-ups in the muscular strength and endurance component, and the back saver sit-and-reach test for his flexibility measure. First, we can question why so much emphasis is placed on the repetitive sit-up and push-up. Like other current health-related, physical education fitness tests (Pangrazi and Gibbons 2003; Charles, Pangrazi, and Franks 2000; Gallahue and Donnelly 2003), “muscle groups and exercises that strengthen one’s ability to stand taller and move with a greater sense of vim, vigor and verve [are overlooked] as contractive push-up and abdominal curling motions [are] emphasizedⁱⁱⁱⁱ” (Smith and Lloyd 2007, 74). Students are supposedly given a choice in selecting a pushing (push-up) or a pulling (modified pull-up) motion in the upper body muscular strength and endurance components of tests such as the Fitnessgram, but more often than not the push-up is tested. The harm in selecting one motion over another is that students tend to “believe that only the tested items can be employed to improve health-

related fitness” (Keating 2003, 150). In actual fact, the bodily imbalance from strengthening the push up and neglecting the pull up motion over time will more than likely make the student less healthy from a vitality perspective. Furthermore, we might “consider the appropriateness of selecting the trunk-folding-over position one assumes in the back-saver or traditional sit-and-reach test to determine changes in flexibility. Imagine the position of a [student] struggling to reach just one centimeter more” (Smith and Lloyd 2007, 74).

If we are to cultivate the bodily signs of vigor and vitality, we need to question why current assessments of HRF emphasize motions that promote the curling forward of the spine and the tightening of the chest. In an era of computer technology where (many) students spend most of their waking hours hunched or curled over a keyboard while sitting at a desk, we need not track, assess and implement exercises and stretches that accentuate forward-leaning, contracted positions. Students like Ian would benefit from stretching out his pectoral muscles, strengthening the back retractor muscles and emphasizing abdominal exercises designed to activate deep core musculature that restores and facilitates postural balance. Current HRF tests promote, by default, fitness plans of exercises such as repetitive push-ups and sit-ups so that students may increase their post-test scores at the expense of postural integrity. So, while the student may improve his or her sit-up count from seven to 16, this will not improve poor posture at the computer desk, and may even exacerbate the hunched, problematic position he or she already adopts for long hours of the day.

One could argue that what is needed are updated exercises in health related fitness (HRF) tests that reflect progressions in present-day health and fitness exercise prescription (Lloyd 2008), and more time dedicated to providing students with relevant content knowledge so that they are better prepared to design balanced programs within their “personalized system for instruction” (Metzler 2005, 180). Without attending kinesthetically to overall posture and sensation within movement patterns, however,

the addition of contemporary exercises will only become effective if students learn how to do them well in a developmentally appropriate fashion. In addition, if we do not question the pedagogy of exercise prescription and depart from mechanistic, depersonalized prescriptions, exercises may be selected on the merits of marketing them rather than on their individual fit. Rather than pull exercises out of the blue, such as focusing on push-ups as the primary measure to assess and train upper body strength in lieu of scapula retraction exercises, we might see the negative influence of these motions with regards to the degree of vitality they produce both in the act of performing the motion and in the long run.

A health-related fitness (HRF) curriculum designed with vital, kinesthetic consciousness in mind, by contrast, encourages students to link their strengthening and flexibility-enhancing motions to phylogenetic and ontogenetic human development (Cohen 1993). Sheets-Johnstone (1999) provides us with insight as to how this can be done in organizing movement into “original kinetic bodily pairings [where we begin with] inhalation and exhalation, for example, [and progress to] opening and closing (eyes, mouth, fist), of walking on one foot then the other, and so on” (1999, 157). Rather than simply balancing the external body in fitness programming, where teachers might check off the completions of equal numbers of trunk curls versus extensions, it is the liveliness of the movement coupling that is made apparent. Moving between sitting and standing positions in a squat, for example, becomes more than an exercise that involves the balanced opening and closing of the hip. The meaning of a squat from standing to sitting “gathers up the body in physiognomic wholeness... [sitting and standing motions] are charged with meaningfulness, not only to articulate explicit figures of sense [...] but to bring about and bear some vital understandings of being” (Levin 1985, 94).

Helping students trace all movement back essentially to the breath, of inhalation and exhalation, helps them revitalize the patterns of motions that constitute their daily existence.

Linking all movement to organic pairings, such as the natural coupling of an inhale with an exhale, helps us re-conceptualize typical, computer-like generated lists of the movements an ‘objective’ body can do. Unfortunately, current provincial curriculum frameworks and fundamental skill resources available to physical and health education teachers do not pick up on the pairings of movements and the feelings of inhalation and exhalation that sustain them.

Elsewhere we have noted that:

What is missing [...] is the specific focus on the kinds of movement patterns and skill progressions that optimize a bodily vitality. For instance, basic locomotor/transport patterns have not simply to do with “e.g., walking, running, hopping, jumping, leaping, rolling, skipping, galloping, climbing, sliding, propulsion through water” (Alberta Learning, 2000), but with running and stopping, leaping and landing, propulsion and resistance. Likewise, the basic manipulative patterns of “receiving e.g. catching, collecting; retaining: e.g. dribbling, carrying, bouncing, trapping; sending: e.g. throwing, kicking, striking” and the stability/nonlocomotor patterns “e.g. turning, twisting, swinging, balancing, bending, landing, stretching, curling, hanging (ibid.) can be paired in terms of pushing and pulling, giving and receiving, grasping and yielding, venturing and withdrawing, extending and contracting, expanding and condensing. (Lloyd and Smith 2005, 125)

If we aim to link the assessments of health-related fitness (HRF) to other activities within the physical and health education curriculum, besides the postural benefits in assessing bodily notions of balance, the coupling of movement pairings allows students to make links, for example, between pushing and pulling in push-up and pull-up motions and the coupling of passing (the push) and receiving (the pull in towards oneself) motions in handling a ball. HRF

components become more than components on a test. They become points of departure for refining the way we contract and extend as well as move forwards and backwards in various planes and pathways in a wide range of games, sports, gymnastics and dance.

It is essential that we also prioritize an awareness and cultivation of purposive vitality affects, (e.g., the motile expressions and feelings within all movement forms) (what are if we are to make connections between muscular strengthening and flexibility-promoting movement patterns and the way we move in the rest of our lives with the intention of experiencing joy in motion. In addition to selecting exercises that promote neutral, upright carriage of the spine, we may also encourage students to connect to the movement rhythms as they perform their health-promoting fitness exercises. Rather than focus on the external pace of a push-up, pull-up, or a squat by asking students to perform them to a cadence that is predetermined (as in the one repetition to every three second guideline in the Fitnessgram test), we might ask them to explore variations in pace and the sensation of experiential time (in relation to the temporal characteristics of Csikszentmihalyi's flow). Instead of using music to set the desired pace, students may be encouraged to explore the rhythmical arch or phrase-like quality in the exercise itself, i.e., surges, bursts or smooth contours in the beginning, middle and end phases of extending and contracting motions. We can, as mind-body enthusiasts, draw attention to the rhythmic phrases within movement by coupling the cadence of the breath to specific parts of the motions. Inhalations are typically linked to extensions of the spine while exhalations accompany contractile phases (Stott Pilates 2004). When time is experienced in breath-led movement, we can become fully absorbed in sensing the unfurling present moment (Stern 2004) instead of counting seconds ticking on a nearby clock. Once each exercise pattern is learned, students can match their internal, breath-led rhythm to the external beat of a workout CD. And once this level

of proficiency is achieved, teachers can manipulate the vitality affects of the exercises and movement sequences by introducing various changes in tempo in relation to student readiness.

There may even be times where palpation is beneficial, especially to awaken sensations within the performance of certain exercises, such as the relaxation of the upper trapezius muscles in a push-up or the firing of the lower trapezius muscles in scapulae retraction. Pedagogical touch or palpation “help(s) [students] feel responses and activations that typically occur below the level of consciousness” (Lloyd and Smith 2006a, 235). Yet such touch is generally taboo in physical education. We prefer and are admonished simply to watch. Thomas Myers explains, “for us in the West...even dance, our most kinesthetic art, is often taught before a mirror, where the student hears the teacher’s words and tries to follow her visual form” (1998, 106). Yet, as we aim to enhance kinesthetic learning (perhaps beyond our professional comfort zone), we may learn from the way teachers interact in other cultures. For example, in Bali, “the old dance teacher moulds her front against the back of the young student laying her hands atop the student’s hands, so that every subtle movement from a teacher is conveyed at once to the student, and every student mistake is perceived and corrected by the teacher far more quickly than visual assessment could possibly provide” (Myers 1998, 106). Rather than subscribing to a ‘hands off’ presence with students, we might consider the appropriateness of professional, pedagogical touch both through palpation and gestures aimed deepening kinesthetic sensation in the cultivation of fluid and flowing movement pairings and patterns. It is necessary, therefore, to continue to “critically reflect [...] on and question [...] the interactive nuances of the motions used to [...] teach [...] as they put educators] in touch with [student] movements, exude aliveness, trace vitality affects, and stay in contact with emerging motions of fluidity that are the hallmark of mature movement” (Lloyd and Smith 2006a, 237). Muscular strength, endurance and flexibility

are felt in a kinesthetic consciousness that can be cultivated quite directly by being in touch with the student's movement aspirations.

Conclusion

The incorporation of health-related fitness (HRF) in physical education should not develop student dependence on an attentive teacher. Nor should it result in activity programs designed at the expense of skill development in the traditional and contemporary forms of games, sports, gymnastics and dance. On the contrary, we have outlined the somatic, kinesthetic consciousness that develops from a movement exploration of the primary registers of HRF. Body composition, cardiovascular fitness, muscle strength, endurance and flexibility can be assessed, however such assessments now need to be made consistent with the movement potentialities they engender.

The curricular incorporation of HRF ought to “empower the student ... to transform his or her own life from the inside out [b]y bringing consciousness back into the muscles” (Dreaver and Provasoli 1999, 401). We are more than “structural entities that are contracted, stiff or out of alignment.” We are “human beings who, in order to become healthy, need to learn how to sense, stretch, bend, twist, breathe, and move in the way nature meant [us] to perform these functions” (ibid). Accordingly, we hope that our aim to enliven concepts of HRF impact future assessments and programs within secondary school programs. Luckily, Ian (the son of the first author of this chapter) has yet to experience a secondary school based HRF test. He is only 16 weeks old. As his anticipated Grade 11 year (in 2023) draws near, we hope that a somatic, vitality approach to developing corporeal constitutions of health may be part of his future curriculum. We hope that

Ian and the children and youth of the next generations experience joy in the many forms of physical activity for which an HRF curriculum can best prepare them. We hope that the physical educators of these children and youth can see their primary task as that of enlivening their experiences of movement as the basis of a lifetime of healthy and active living.

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ⁱ For example, at the AAHPERD 2005 conference in Chicago, Illinois, there were well attended courses entitled “Fitness AND Sports - Yes You Can Teach Them Together,” “Video Fitness Games: If You Can’t Beat ‘Em, Join ‘Em,” and “Polar Electro Inc: Tools for Teaching the New PE”.

ⁱⁱ We recognize that the term “neutral” falls short of picking up the marvelous nature of a perfectly aligned spine designed to compress, extend and bear weight with remarkable ease. It does however address its relative position, not to be overly pulled in one direction or another, a deviation from its central location.

ⁱⁱⁱ Note that the Fitnessgram contains a trunk lift but it is only performed to a maximum height on one occasion. Isometric strength is not measured and therefore, more emphasis is given to building strength in the abdominal curl up motion.

Chapter 9