INQUIRING INTO EMERGING UNDERSTANDINGS OF PHYSICAL LITERACY THROUGH INTERACTIVITY

by

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Abstract

This thesis is comprised of two articles, bookended an introductory chapter and a closing chapter. The first article is called “Are We Heading in the Right Direction?: An Attribute Analysis of Physical Literacy Assessment Tools” and the second one “Physical Literacy, Interactivity, and Communication: Emergent Teacher Understandings.” This is a viewpoint that analyzes what attributes of physical literacy (Whitehead, 2010; 2019), were exemplified or overlooked in three Canadian physical literacy assessment tools used by teachers, coaches, parents, and students. The analyzed tools included the Canadian Assessment of Physical Literacy (CAPL) developed by the Healthy Active Living and Obesity (HALO) Research Group, PlayTools: Play Fun developed by Sport for Life (S4L), and Passport for Life developed by Physical and Health Education (PHE) Canada. In conclusion, all three tools included assessments of Motivation, Confidence, Competence, Awareness, and Understanding. However, only Passport for Life assessed all of Whitehead’s (2019) attributes yet, not in equal amounts.

The second article aimed at describing the emergent understandings of the concept of physical literacy from the perspective of new and seasoned teachers interested in PE. By means of the exploration, recollection, and description of a vivid interactive and relationally oriented pedagogical physical activity understandings of physical literacy were described. Motion-sensing phenomenological interviews with three participants were carried out to better understand what the concept of physical literacy meant in their everyday practice. Recommendations for future research were that more attention could be placed on the least developed aspects of physical literacy, bodily communication and the role it plays in forming relational connections between students and teachers.

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List of Acronyms

CAMSA: Canadian Agility and Movement Skill Assessment

CAPL: Canadian Assessment of Physical Literacy

ESL: English as a Second Language

FMS: Fundamental Movement Skills

HALO: Healthy Active Living and Obesity

HPE: Health and Physical Education

IA4L: InterActive for Life project

MSP: motion-sensing phenomenology

MVPA: Moderate-to-Vigorous Physical Activity

PA: Physical Activity

PACER: Progressive Aerobic Cardiovascular Endurance Run

PE: Physical Education

PHE Canada: Physical and Health Education Canada

S4L: Sport for Life

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Introduction

Physical Literacy

Whitehead (2001) defined physical literacy in a phenomenological way almost 20 years ago in the UK, arguing it "must encompass more than physical movement, it must include an ability to 'read' the environment and to respond effectively" (p. 130), and even refined it by saying that physical literacy "is not a pure 'bodily' capacity, rather it describes a holistic engagement that encompasses physical capacities embedded in perception, experience, memory, anticipation and decision making" (p. 131). Nevertheless, physical literacy is commonly understood around the world in terms of fundamental movement skill performance or the ability to move the body correctly to carry out a physical activity that objectifies the body and knowledge of health concepts (Barnett et al., 2018; Cairney, Clark, Dudley, & Kriellaars, 2019; Cairney et al., 2018).

Whitehead's (2001; 2010) initial phenomenologically-informed definition of physical literacy was based on the ideas of Sartre, Merleau-Ponty, and Nietzsche. For her, the embodiment in existence is key, meaning there can be no separation between 'body and mind', and humans need to be considered as an integrated whole. As such, a human is the result of all the interactions they have in their lives and they are 'beings in the world'. Likewise, Whitehead explains that individuals interact with the world "in whatever ways they can, and the richer these interactions in breadth and depth, the more fully realised a human, the individual will become" (Whitehead, 2001, p. 129). She further adds that a physically literate individual should also "have the interpersonal embodied attributes that facilitate *effective communication* with others" (p. 134, *emphasis added*) and "through a range of senses, appreciates, via experience, the

relevant components of the display" (p. 134). Thus, the definition of a physically literate person is one that:

> Moves with poise, economy and confidence in a wide variety of physically challenging situations. Furthermore the *individual* is perceptive in 'reading' all aspects of the physical environment, anticipating movement needs or possibilities and responding appropriately to these, with intelligence and imagination. (Whitehead, 2001, p. 129, *emphasis added*)

Countries all around the globe, from the USA to Australia, and including Canada, started to adapt their national standards and curricula to aim at making students 'physically literate' instead of 'physically educated' (Robinson & Randall, 2017). Even though Whitehead invited discussion and critique to the term and its use, few authors have done it. Among them, McCaffery & Singleton (2013) analyzed it and stated that Sport for Life (S4L) and the Long-Term Development (LTD) model definitions of physical literacy focus on movement skill acquisition, but neglected to include "conceptions of monism and the value of interaction with the world" (p. 8).

In response to this global shift towards the new term "Physically literate" a study by Robinson, Randall, and Barrett (2018) carried out with PE specialist councils of four provinces in Canada, which included 22 education professionals, found out that the concept of physical literacy was not generally understood as only one notion. Their findings showed that some of the professionals thought being physically literate meant the same as being physically educated, others defined it as moving in many ways and places, others said it was knowing the language of movement, and finally others declared it meant Fundamental Movement Skills (Robinson, Randall, & Barrett, 2018). The (mis)understanding of the concept seems to encompass not only teachers but also their higher ups, which points at a need for clarification at all levels. In this

case, the only way in which we can aim at clarifying it is through teacher education as some authors point out (Durden-Myers and Keegan, 2019).

However, with different definitions and different interpretations of physical literacy there might be "significant consequences upon the teaching and learning of physical education" (Robinson & Randall, 2017, p. 43), so getting an idea of what students understand by physical literacy could guide future questions to become aware of the holistic approach for children to stay active and healthy throughout their lives. Many authors like Durden-Myers and Keegan (2019) have discussed the lack of literature that explores what teachers understand by physical literacy and the ways in which they can introduce it in their PE lessons. This statement seems worrying since teachers have to work with the federal and provincial directives for schooling, and if they are in charge in so many aspects of the literacy process, many things are a stake, especially if the understanding or interpretation of the documents is not what it should be. This could potentially affect how children and teenagers approach physical activity and whether they are benefiting from the changes brought about with the policies.

Literacy is understood in this thesis not only as looking at words on a page and decoding their message, but also as finding and sensing meaning in the world and how things look. This includes connecting to the environment and others, i.e. humans, and other living beings. Though with time we have lost most of the sensual language our ancestors used, going back to our roots when they started drawing the first "letters" to depict the things they saw and how they interacted with them might help make sense of physical literacy as more than fundamental movement skills taken as building blocks for practicing sports. Through this work, I tried to go beyond what it means to read, to connect, to interact, to sense, and I tried to look at what the concept offers and what we are not fully understanding about it. The primacy of movement and the focus on

communication are brought to the forefront and key concepts that seem to have been lost since the birth of physical literacy. More attention needs to be paid to the literacy part of physical literacy without reducing it to what we commonly understand by reading and writing. Even when it seems we still need to come a long way for it to happen, giving teachers the chance to reflect on their own understandings regarding this concept could be a good start.

Personal Motivations to Study Physical Literacy

This is a thesis about Physical Literacy where I look at this concept through a relational and communicative lens, which is motivated by my background in second language education. After choosing Dr. Rebecca Lloyd as my supervisor, and her agreeing to guide me through this process, we had some discussions trying to find some common ground to locate the possibilities of a project to breach the gap between her interests and her main field with mine. As a PHE teacher and researcher, the fields of linguistics and second language teaching are as foreign to her as teaching Physical Education is to an English as a second language teacher. It is pure chance that I mention my interest in how being physically active had once helped some of my students to communicate in English without focusing on the correctness of their grammar or the accuracy of their vocabulary. It was through the experience of playing various games outdoors and competing in an “English Day” tournament, that students from all levels of proficiency came together and used English as a means to an end. They forgot everything about marks, assessments, conjugations, and vocabulary lists and concentrated on communication among

themselves to do the activities, solve the riddles, run, jump, and have fun while attempting to amass as many points as possible.

After sharing this experience, we ended up discussing the concept of physical literacy and how body language sometimes plays a role beyond supporting language. I was fully introduced to this whole new (for me) concept of physical literacy within the context of an **InterActive for Life** (Lloyd & Smith, 2017) professional development workshop offered by my supervisor on a professional learning day. This seemed to be the perfect opportunity to experience what Dr. Lloyd means by "InterActivities" and what she has tried to put into words regarding flow and interacting with others through movement. I naturally jumped at the chance to learn more and I found myself first observing the partnered-up participants performing relationally-oriented activities, which are coined "InterActivities", and then, after a while, stepping in to fully take part and experience the InterActivities such as a mirror walk (**https://function2flow.ca/mirror-movement/**). Being able to understand what my partner wants me to do and to convey my meaning to her makes me wonder if we could delve further into such dimensions within the Physical Literacy curricular framework, an orientation that may accompany language teaching and learning.

Questions such as, how we are able to express and communicate meaning and form a relational connection after only a few seconds, if we are using this type of communication at all times, and if students are being taught to communicate in such ways, are running through my mind at that moment. I immediately compare it to the "English Day" atmosphere my students had experienced, and how many of them had described their participation in the games as being able to understand and communicate with more than their words, especially those of beginner English levels. Since these questions had already plagued me with the desire to know more since

then, I feel exploring this side of physical literacy could be a great project for my thesis. Thus, the decision to research how communication through movement is experienced and how teachers understand communication to be part of physical literacy begins.

Exploring the way physical literacy is understood and lived within PE classrooms could lead to interesting findings and insights into the communicative aspect of physical literacy, which in turn could be applied in other fields of education including language teaching. As a second language teacher, I have always understood literacy as being able to read, write, listen, and speak, and ultimately to communicate with others, which includes gesturing and body movement to convey meaning. Furthermore, after teaching languages for many years, I have always had communication with others as the main pillar of my practice. The way in which someone gets their message across, asks for clarification, or just points at things when they lack the words is a fascinating world for any educator who wishes to teach a language. Be it as teachers or learners of a language, we have all experienced the need to use this tool to give our opinion, ask for help, answer a question, describe the world around us or any other among a myriad of activities based on communication between two sentient beings.

However, not only words are required in this process. We utilize other languages aside from the verbal: non-verbal vocalizations (including grunts, roars, laughter, screams, etc.) (Raine et al., 2019), tone of voice (Tiwari & Tiwari, 2012), written language (Whiteman, 2013), body language (Müller et al, 2014), dancing (Rounds, 2016), and gestures (Müller et al, 2014). This is evidenced in young children or beginner learners who rely on movement and signs to convey meaning before they can actually speak (Wood, 1981). A clear example is agreeing or disagreeing, as seen by Guidetti (2005) when she states “for agreement and refusal, the gestural modality is operational before the verbal modality. In other words, some of the youngest children

exhibited a gestural yes and no before they used the corresponding words" (p. 922). More often than not, I have found myself using gestures to clarify meaning to my students or to explain a new word. Movement and gesturing are key elements for language teachers (Lazaraton, 2004), so finding a way to improve the way in which we communicate through movement could benefit language learners and physical education students, aside from PE teachers and Second language teachers alike.

This was not the first time I encountered silent, but effective communication in my career. While working in Colombia, I found myself in a position to enact different activities and approaches in the language center I was working in. We had found that combining different activities with language teaching yielded better results than purely written or oral exams. The few times we had used the target language as a means to perform an activity instead of as the final product of an assessment, the results had been better. Not only were students more motivated and engaged, they also performed better in terms of fluency, grammar, and vocabulary.

I briefly mention the "English Day" activity above as the catalyst that changed how I viewed physical literacy, so now I would like to share part of my experience teaching English to Colombian students within a physically active environment. The idea was for groups of 4-5 students to compete against each other for points in several different activities that always included being physically active. All the events or activities required the students to run, jump, move, act, read, write, or speak while using English, and successfully complete a task for points. At the end of the day, the group with the most points won and could choose one of their lowest grades for the period and turn it into an A+. For this specific activity, one student had to read a paper with some a sentence and act it out for their group. The group had to shout the sentence

using correct grammar, vocabulary, and tense. They had to guess five sentences to be able to move on to another event and accumulate more points.

~~It is nerve-racking to wait for Shun (pseudonym) to read the next sentence and start acting. This group has been doing pretty well and they are ahead by a couple of points by now. Many groups that had already passed through here deemed this the hardest event because it took them a long time to get five correct sentences. It isn't physically demanding like other activities where they have to run, jump, take a marker and write or where they had to relay a message while racing other groups. In any case, this group is taking their sweet time and poor Shun is doing his best to act very strange things out. By now he is done reading and he starts to move. I am dumbfounded and it appears his teammates are too. None of them have uttered a word and they are looking at him with expressions that range from surprise to outright desperation. He is kind of running while skipping and waving his arms in the air. I have no idea what he is doing, and judging by what his partners are yelling, neither do they. "I am running," "I dance," "I like jumping," "I'm in pain." I'm trying very hard to remember the sentences I wrote to guess the one he is acting out but I'm coming up blank. His movements are disjointed and he's doing so many things at the same time that it is pretty hard to focus on the underlying message. We all need to look further for what he wants us to understand, but we aren't connecting to his movement and we are incapable of reading between the lines.

I see his brow furrows as if he is incapable of understanding why his teammates haven't guessed yet. He stops all movement and shakes his head at them while he sneers. It is a clear message: "Obviously not. Keep guessing and try harder." He is trying to embody the actor of an action, but at the moment no one can relate to what he is doing or his personal interpretation of the sentence he read.

Nanae (pseudonym) yells at him to do something and continue acting. This seems to set him in motion again. He points to his ear and waves his hands slowly in front of him, mimicking slow waves. Tarou (pseudonym) yells, "Something with slow music." Shun nods frantically. Finally they got something right. Then, he points to his feet and stands on his tippytoes. Tarou yells again, "I'm tall?" All that gets him is an eyeroll and a head shake. Shun tries to walk on the tips of his feet, which is commendable since he is built like a tank, and then jumps and... is that a twirl? He appears to be channeling a ballet dancer, but it's very difficult to separate his quarterback image from the subtle dance movements of a ballerina. He keeps his arms straight to his sides and spins. Nanae ventures, "I'm dancing ballet?" Shun stops and nods. He waves his right hand in forward circles; a universal sign for keep on going.

I have been racking my brain until that moment. Now I know what sentence he got. It won't be long now until they get it. Tarou starts conjugating because the most difficult part is over, "I was dancing ballet. I will dance ballet. I have danced ballet..." Shun tilts his right hand in front of him vertical to horizontal. Universal sign for so-so. They are close, but not quite yet. Shun shows two fingers and shakes his head. Nanae asks, "The second word is wrong?" Shun nods and uses the go on sign again. Nanae tries "I practice ballet." Head shake. "I do ballet!" Shun nods noncommittally and uses his thumb to point at his back as if he is hitchhiking. That is the English teacher universal sign for the past tense. Nanae yells, "I did ballet!" Shun sighs and says "Yes! Finally..."

How was Shun able to communicate a message to his group? It was not only asking him to act, but also to guide his group through his own acting. It was more that guessing a word at a time; it was looking at his acting as a whole and sense what he was portraying while remembering the correct collocation in English to talk about this free time activity. It was not as

easy as one might think as could be gathered from Shun's and his team's actions. How do you get four young adults through thousands of possible words to get the right combination, use the right expression and win the game? The rules stated he could not talk or make sounds, removing his ability to use verbal language or non-verbal vocalizations. Body movement, gestures, and hand signs were all valid, as long as he did not use any verbal communication. The knowledge of how to put them to good use might have come from many sources, but I kept on wondering if, as teachers, we were also teaching our students how to communicate this way without even realizing it. Understanding how this process takes place and how educators could empower learners of a language with some very useful tools sparked my interest further and generated a myriad of questions for which I had no answers.

Do we value body language as much as verbal communication? What tools and curricular supports do we have to make sure we can prepare our students for communicating in all possible ways? In the following two articles I explore the way in which physical literacy is seen and assessed in Canada and provide perspective for how the dimensions of communication and relationality could become more pronounced. Descriptions of three teachers' perspectives and experiences of physical literacy are analyzed in my second article and their perspectives are seen through an interactive lens that focuses on connections between participants which contrasts the way physical literacy is oftentimes understood.

Format of Thesis by Article

My thesis is comprised of two articles, bookended by this introductory chapter and a closing chapter. Both articles included here retained the formatting required by each of the

journals they were submitted to. The first article followed APA guidelines and the second article was formatted in the Chicago style.

The first article is called “Are We Heading in the Right Direction?: An Attribute Analysis of Physical Literacy Assessment Tools” and the second one “Physical Literacy, Interactivity, and Communication: Emergent Teacher Understandings.” The former was submitted to the Canadian based *PHENex* Journal, which is affiliated with the research council of PHE Canada and Acadia University. The latter was submitted for publication in the *Physical Education and Sport Pedagogy*, which is the international journal of the Association for Physical Education (AfPE) in the UK. These journals were chosen because the UK was where the term physical literacy was birthed, and this particular journal has published countless papers on this topic. As for the Canadian *PHENex* Journal, since I wanted to see how closely the Canadian physical literacy tools were to the full and complete definition put forth by Whitehead (2001; 2010) and in so doing, create more critical consciousness in the Canadian context, a local journal was chosen.

The first article is a viewpoint that analyzes what attributes of physical literacy (Whitehead, 2010; 2019), were exemplified or overlooked in three Canadian physical literacy assessment tools used by teachers, coaches, parents, and students. The objective was to identify opportunities to expand upon the current instruments and understanding of this concept. The analyzed tools included the Canadian Assessment of Physical Literacy (CAPL) developed by the Healthy Active Living and Obesity (HALO) Research Group, PlayTools: Play Fun developed by Sport for Life (S4L), and Passport for Life developed by Physical and Health Education (PHE) Canada. In conclusion, all three tools included assessments of Motivation, Confidence, Competence, Awareness, and Understanding. However, only Passport for Life assessed all of Whitehead’s (2019) attributes yet, not in equal amounts. The attributes of Communication and

the desire to stay Active for Life were the most underrepresented in these Canadian tools. Additionally, none of them took into account the relational dimension of physical literacy, which is an opportunity for further research on how we are meaningfully connected to ourselves, others, and the world to improve our understanding and assessment of physical literacy.

The second article aimed at describing the emergent understandings of the concept of physical literacy from the perspective of new and seasoned teachers interested in PE. By means of the exploration, recollection, and description of a vivid interactive and relationally oriented pedagogical physical activity understandings of physical literacy were described. Motion-sensing phenomenological interviews with three participants were carried out to better understand what the concept of physical literacy meant in their everyday practice. The main research question was: What are teachers' emergent understandings of physical literacy, and to what degree, if any, does their understanding of physical literacy include a dimension of relational connection and communication? The sub-research question was: What experiences inform their emerging understandings of physical literacy? The participants' perceptions of how their understanding of physical literacy developed and changed throughout their interview were also described. A common theme when describing physical literacy in the context of pedagogical interaction was the role of communication. This paper encourages us to consider that conceptions of physical literacy should include more than being able to run and jump and perform other fitness or skill related tests which are often equated with physical literacy assessment. Recommendations for future research were that more attention could be placed on the least developed aspects of physical literacy, bodily communication and the role it plays in forming relational connections between students and teachers.

Finally, Chapter 4 will offer a synthesis of what I learned, the difficulties related to the writing and analysis processes, and the future direction of my research interests.

Publication Process

This whole process was new to me, but thankfully, with my supervisor's help and guidance it was a success. There are many steps involved in writing a paper for publication and it was an arduous task to say the least. Aside from the actual research process, details like the maximum number of words or pages, the format, and keeping the writing concise were challenges that could make this type of thesis format harder to deal with than a monograph. At this point, we still have not heard back from the journals regarding the peer review for either of the articles, but now I feel better equipped to deal with the edits and changes they will surely ask for. As such, for future researchers, this thesis format would surely get them moving in the right direction.

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Chapter 1

ARE WE HEADING IN THE RIGHT DIRECTION?: AN ATTRIBUTE ANALYSIS OF PHYSICAL LITERACY ASSESSMENT TOOLS

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Are We Heading in the Right Direction?: An Attribute Analysis of Physical Literacy Assessment Tools

Abstract

Initially six (Whitehead, 2010), then more recently, eight physical literacy attributes (Whitehead, 2019) were developed to help mobilize the phenomenological philosophy upon which physical literacy is based into practical action. Considering the close link between assessment practices and the cultivation of understanding, this viewpoint article closely analyzes what attributes of physical literacy have been exemplified in three Canadian physical literacy assessment tools and what attributes have been overlooked. Our motivation was to question the direction in which we are heading in terms of identifying trends as well as opportunities for growth. The analyzed tools were: *Canadian Assessment of Physical Literacy (CAPL)* developed by the Healthy Active Living and Obesity (HALO) Research Group, *PlayTools: Play Fun* developed by Sport for Life (S4L), and *Passport for Life* developed by Physical and Health Education (PHE) Canada. All assessment tools included the attributes of Motivation, Confidence, Competence, Awareness, and Understanding. *Passport for Life* was the only tool that included all eight attributes, yet not in equal amounts. *Communication* and the desire to stay *Active for Life* were the most underrepresented attributes. Currently, none of the assessment tools take into account the relational dimension of physical literacy, hence further research on how we are meaningfully connected to ourselves, others, and the world could be emphasized.

To what extent do assessment practices and tools lead to the development of comprehensive, critical and creative understandings of a topic of interest, in this case physical literacy? This was a phenomenological concept defined by British physical education teacher and researcher, Margaret Whitehead (2001; 2010; 2019). One might argue that a pedagogical tool designed to assess physical literacy will have a direct influence on how physical literacy as a concept is understood since teachers oftentimes strengthen their teaching by using assessment instruments (Nolen, et al., 2011; Herman, et al., 2015; Lander, 2015). Such is the line of questioning that informs our Canadian-contextualized inquiry into the relationship between physical literacy assessment and the potentiality of furthering conceptual understanding. The three nationally recognized tools that form the heart of our analysis include: (a) the *Canadian Assessment of Physical Literacy (CAPL)* developed by the Healthy Active Living and Obesity (HALO) Research Group, (b) *PlayTools: PLAY Fun* put forward by the coaching association Sport for Life (S4L), and (c) *Passport for Life* developed by Physical and Health Education (PHE) Canada. Throughout this viewpoint article, we analyze what dimensions of physical literacy have been exemplified in each of these aforementioned tools and what physical literacy attributes (2010; 2019), have been overlooked. Our motivation in conducting such an inquiry is to identify opportunities for researchers and practitioners to expand upon our current measures.

We recognize that we are not the first to review *CAPL, PlayTools* and *Passport for Life.* Quite recently, Robinson and Randall (2017) reviewed these measures of physical literacy in terms of their content, useability, fidelity, and trustworthiness (Robinson & Randall, 2017). As a next step, we wish to further explore the content of each tool in relation to the physical literacy attributes as put forth by Whitehead (2010; 2019) and the phenomenological philosophy upon which these attributes are based. Analyzing physical literacy in relation to physical, affective,

behavioral and cognitive dimensions as were featured in the Robinson & Randall (2017) analysis for example, may give the impression that thought, feelings, and movement are separate conceptual entities. While we see references to physical, affective, and cognitive domains in Whitehead's (2019) most recent text in parenthesized captions, we question to what extent pervasive traditions and assessment practices in physical education have pressured Whitehead to refer to such divisive ways of thinking about physical education. From a phenomenological perspective there are no clear divisions between thought, feeling and action. Cognition, as Merleau-Ponty (1962) stressed, is embodied. How we come to know and express ourselves is an (embodied) (en)action (Sheets-Johnstone, 2014a, 2017, 2018, 2020). In fact, according to Sheets-Johnstone, a leading phenomenological scholar who prioritizes the primacy and felt sense of movement, thought itself is a particular kind of movement (Sheets-Johnstone, 2011, 2014a, 2014b). While David Kirk may have questioned the future of physical education back in 2010 and the possibility of radical reform, his prediction that we would likely experience 'more of the same' is sadly ringing true. If we continue to organize our curricular thinking, particularly physical literacy assessment practices in accordance with cognitive, affective and behavioral categorizations that trace back to Bloom's taxonomy (Pinar, et al., 2000), we are certainly 'missing the mark' in terms of what the phenomenological concept of physical literacy may offer the future of physical education (Stolz, 2013; Thorburn, 2008; Thorburn & Stolz, 2017).

Canadian Physical Literacy Assessment tools

For those not familiar with the ***CAPL***, ***PLAY Tools***, and ***Passport for Life*** assessment tools, they are easy to search and access online. HALO's CAPL consists of a Manual for Test Administration, which includes a questionnaire to be answered by the participant. The test

administration manual provides information on how to assess each of the four core domains that have been mapped to the concept of physical literacy, namely, Physical Competence, Daily Behavior, Motivation and Confidence, and Knowledge and Understanding, as well as the rationale behind each measure. The questionnaire is made up by items to assess the children's knowledge and motivation towards physical activity.

The *CAPL* Manual for Test Administration begins by assessing the Daily Behavior component and gives a detailed explanation for the use of the pedometer for seven days. It is described as a tool to assess how much children move during the day by counting the number of steps they take. The next part is the *CAPL* questionnaire which assesses children's perceptions of the amount of moderate to vigorous physical activity the child takes part in daily and weekly. In regard to the Physical Competence component, it combines scores from the Plank assessment, the Progressive Aerobic Cardiovascular Endurance Run (PACER), and the Canadian Agility and Movement Skill Assessment (CAMSA) where the child is expected to jump, run, catch, slide, throw, skip, hop, and kick. When administering the CAMSA, the child can observe the activities done during the course twice before they begin. As for PACER, the objective is to assess the student's cardiorespiratory endurance. The child runs back-and-forth between two lines that are 20 m apart in cadence with an accompanying CD which plays audible beeps that gradually increase in pace. Finally, the plank assessment targets torso strength by evaluating the maximum time the child can maintain a proper plank position.

Sport for Life's *PLAY Tools* assessment consists of five different tools: *PLAY Fun, PLAY Basic, PLAY Coach, PLAY Parent, PLAY Self,* and *PLAY Inventory.* ***PLAY Fun*** is the complete assessment of 18 fundamental skills or tasks, while *PLAY Basic* is a shorter, quicker, and simplified version of *PLAY Fun* that assesses only five main fundamental movement skills

(FMS), namely, Running, Locomotor, Object Control – Upper Body, Object Control – Lower Body, and Balance, Stability & Body Control. Note that both *PLAY Fun* and *PLAY Basic* are to be administered by a trained professional. *PLAY Coach* evaluates nine FMS. *PLAY Parent* and *PLAY Self* are subjective tools that take on the form of questionnaires to be used by parents or guardians, and children, respectively. Within these measures, subjective scores are given to the number of items a child performs an activity with ease as well as the level of perceived enjoyment. Finally, *PLAY Inventory* is a participation-oriented form designed to track a year of participation in various activities for a child. For the purpose of this analysis, we will focus on *PLAY Fun* as it is the most complete assessment offered by Sport for Life.

Physical and Health Education Canada's *Passport for Life* includes online tools with complete instructions and videos for teachers and students in Grades 4-6, Grades 7-9, and Grades 10-12. Teachers administer the assessment of Fitness and Movement skills, while students complete two online questionnaires related to Active participation and Living skills. Assessed Fitness skills consist of three components: Aerobic/Cardiovascular, Endurance, Balance/Dynamic Stability, and Core Strength, which is carried out by means of a four-station circuit, a lateral bound, and a plank. Assessed Movement Skills include locomotion, object control, and object manipulation.

Each tool cites Whitehead when they define physical literacy. The Healthy Active Living and Obesity Research Group (HALO) referenced the definition of physical literacy as "the motivation, confidence, physical competence, knowledge and understanding that individuals develop in order to maintain physical activity at an appropriate level throughout their life" (Whitehead, 2010, p. 5) in their *Canadian Assessment of Physical Literacy - Second Edition (CAPL-2)*. They also include a definition of a physically literacy child put forth by Whitehead, as

one that is able to: a) move capably and confidently in a range of physically challenging situations, b) read the physical environment, which helps to anticipate possible movement needs, and c) respond intelligently and imaginatively in said contexts (Whitehead, 2001). Similarly, Canada's Physical Literacy consensus statement which informs *PlayTools* defined physical literacy as "the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life" (Sport for Life Society, 2015, p. 1). PHE Canada (2013) defined physical literacy as "moving with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person" (PHE Canada, 2013, para. 1). Hence, the definitions in all three tools address moving with competence and confidence, the ones in *CAPL* and *PlayTools* include the importance of motivation and long-term engagement in physical activity across one's life course, while the one in PHE Canada hones in on the whole person.

None of the tools specifically cited the attributes of physical literacy that Whitehead (2010, 2019) has further developed and we were curious to see what were implied or overtly present. Our rationale in attending to these attributes is that they help practitioners mobilize conceptions of physical literacy into action as they detail "behaviours that are symptomatic of progress being made in respect of fostering physical literacy" (Whitehead, 2019, p.11). Before we engage in such an analysis however, we will provide a description of Whitehead's (2010, 2019) physical literacy attributes and provide commentary on how they have changed over the years.

Methodological Approach

For this analysis, the decision to use interpretive content analysis was easy due to the essence of the instruments and the objective of the study. Additionally, as stated by Drisko and

Maschi (2015) the results of this type of study are commonly used to document a perceived issue and to evidence it so that change can occur. Interpretive content analysis was also used to move from frequency counts towards the interpretation and meaning of the content keeping in mind the context (Baxter, 1991). To further refine the analysis and taking into account the qualitative nature of this paper, qualitative content analysis was also employed due to the fact that we included the themes and core ideas in the instruments without using any statistical analytic methods (Mayring, 2021). Following this methodology, the attributes were condensed into one-word categories (and the last attribute into a three-word category) to facilitate the analysis, coding, and reporting of the data.

Attributes of Physical Literacy

The original definition of physical literacy put forward by Whitehead in 2001 includes many of the attributes that she further described and delineated in her 2010 and 2019 texts:

> …a physically literate individual… moves with poise, economy and confidence in a wide variety of physically challenging situations. Furthermore the individual is perceptive in "reading" all aspects of the physical environment, anticipating movement needs or possibilities and responding appropriately to these, with intelligence and imagination. (Whitehead, 2001, p. 3)

By 2010, Whitehead's physical literacy definition was much shorter, but it also had a series of appended attributes as described in Table 1. The 2010 definition was: "as appropriate to each individual's endowment, physical literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse" (pp. 11-12). Almost a decade later, Whitehead (2019) further modified her definition

of physical literacy to be the "motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engaging in physical activities for life" (p. 8), an edit based on wanting to highlight that individuals should value physical activity and be self-motivated to maintain an active lifestyle. She also increased the number attributes from six (A-F), to eight (A-H) in hopes of clarifying the nature of the concept. There were some changes within the attributes, and they were explained as a way to make sure the "affective, physical and cognitive" domains were equally covered (Whitehead, 2019, p.11) and described in a way that practitioners could understand (see Table 1). Table 1 outlines at-a-glance what the attributes were in 2010 and 2019 and how they changed, i.e., what was removed or deleted, as indicated with a ~~strikethrough~~, what was edited with a similar expression, as indicated with *italics* and what was added as a new concept, as indicated in **bold**.

Table 1. Side by side comparison of Whitehead's 2010 and 2019 attributes

2010 Attributes	2019 Attributes
A. Physical literacy can be described as a ~~disposition~~ characterised by the motivation to capitalise on innate movement potential to ~~make a significant contribution to the quality of life~~.	A. Motivation to be proactive in taking part in physical activity, applying self to physical activity tasks with interest and enthusiasm, and persevering through challenging situations in physical activity environments (affective domain)
B. Individuals who are physically literate will move with poise, economy and confidence in a wide variety of physically challenging situations.	B. Confidence in relation to the ability to make progress in learning new tasks and activities, and assurance that these experiences will be rewarding (affective domain)
C. Physically literate individuals will be perceptive in *'reading'* all aspects of the physical environment, ~~anticipating movement needs or possibilities~~ and	C. Movement with poise, economy and effectiveness in a wide variety of challenging situations (physical domain)

responding appropriately to these with ~~intelligence~~ and imagination.	
D. These individuals will have a ~~well-established sense of self as embodied in the world~~. This, together with ~~an articulate interaction with the environment~~, will engender positive self-esteem and *self-confidence.*	D. Thoughtful and sensitive perception in *appreciating* all aspects of the physical environment, responding as appropriate with imagination and *creativity* (physical domain)
E. ~~Sensitivity to and awareness of embodied capability will lead to fluent self-expression through non-verbal communication and to perceptive and empathetic interaction~~ *with others.*	E. The ability to work independently and *with others,* in physical activities in both cooperative and competitive situations (physical domain)
F. In addition, physically literate individuals will have the ability to identify and articulate the essential qualities that influence the effectiveness of their own movement performance, and will have an understanding of the principles of embodied health with respect to *basic aspects such as exercise, sleep and nutrition*. (Whitehead, 2010, pp. 12-14)	F. The ability to identify and articulate the essential qualities that influence the effectiveness of movement performance (cognitive domain)
	G. An understanding of the principles of holistic embodied health, in respect of a *rich and balanced lifestyle* (cognitive domain)
	H. The *self-assurance* and self-esteem to take responsibility for **choosing physical activity for life** (affective and cognitive domains) (Whitehead, 2019, p. 12)

Note: The ~~struckthrough~~ parts show what was deleted or removed from the new attributes. The *italicized* text indicates concepts that were described with synonyms intended to simplify yet preserve meaning. **Bolded** text indicates a new component of the physical literacy definition.

Such a side-by-side analysis of the attributes shows what components are new, such as attribute H, “choosing physical activity for life” (Whitehead, 2019, p.12). We can also see how

attributes A and E (2010) still correspond to their counterparts in 2019, while attribute C and D (2010) became D and H (2019), respectively. Contrastingly, such a comparison shows the many deletions and omissions, among which the most worrying one is "significant contribution to the quality of life" from 2010's attribute A, since it was the only mention of a benefit to the quality of life of the person. Other deletions include "anticipating movement needs or possibilities" from 2010's attribute C, as well as a "well-established sense of self as embodied in the world" and "an articulate interaction with the environment" from 2010's attribute D.

"Sensitivity to and awareness of embodied capability will lead to fluent self-expression through non-verbal communication and to perceptive and empathetic interaction" from 2010's attribute E were not included or even paraphrased in the new set of attributes. We question the impact of these deletions with regard to understanding physical literacy as an expressive and a relational concept. While working with others is mentioned in 2019's attribute E, no mention is made to movement that is communicated in and through expressive action, what some refer to as 'non-verbal' behavior, but as Sheets-Johnstone (2011) reframes, in terms of the primacy movement has, that movement is our first language, our mother tongue.

Attribute Analysis of Three Canadian Physical Literacy Tools

As stated earlier, moving beyond cited definitions of physical literacy and giving consideration to its attributes shows how physical literacy is mobilized into action and conceptually understood within physical literacy assessment tools. Table 2 describes *CAPL, Play Tools: PLAY Fun* and *Passport for Life* in terms of the physical literacy attributes they exude and where each attribute can be found within each tool. Each attribute was shortened to a

single word or short phrase, i.e., H. Active for Life. To see the complete description of each attribute, you may refer back to Table 1.

Table 2. Attributes included in Three Physical Literacy Assessment Tools

2019 Attributes	*CAPL* by HALO	*PLAY Tools*: *PLAY Fun* – by Sport for Life	*Passport for Life* by PHE Canada
A. Motivation	Daily Behavior: Pedometer, MVPA* score – not found Physical Competence: PACER**, CAMSA***, Plank – not found *CAPL* questionnaire – Present in 1 question: "I am active because..."	*PLAY Fun* Workbook for 18 skills/tasks - Not found	Active Participation Questionnaire: Question 11. "My parent(s) or guardian(s) provides me with the encouragement and support I need to be physically active", Question 19. "The community I live in does not offer activities that I am interested in/ meet my needs.", Question 22. "How interested are you in doing more dance?", Question 25. "How interested are you in doing more active team sports and games?", Question 28. "How interested are you in doing more individual sports?", Question 31. "How interested are you in doing more fitness activities?" Living Skills Questionnaire: Question 2. "When participating in physical activities, I tend to feel interested",

			Question 11. “I am very interested in learning new physical activities.”, Question 18. “Even when being physically active is dull and uninteresting, I manage to keep working hard at it.”
B. Confidence	Daily Behavior: Pedometer, MVPA score – not found Physical Competence: PACER, CAMSA, Plank – not found *CAPL* questionnaire – Present in 3 questions: “When it comes to playing active games, I think I am pretty good.”, “I think I do well at activities compared to other children”, “When it comes to being active, I have good skills.”	*PLAY Fun* Workbook for 18 skills/tasks – confidence is assessed as low, medium or high when performing each task	Living Skills questionnaire: Question 23:“I’m confident I can perform well in a variety of physical activities.”, Question 32. “I expect to do well whenever I participate in physical education.”, Question 37. “I feel good about the way I look physically.”
C. Competence	Daily Behavior: Pedometer, MVPA score – not found Physical Competence:	*PLAY Fun* Workbook for 18 skills/tasks – Movement Competence is assessed for Running, Locomotor, Object control - Upper Body, Object control – Lower	Fitness Skills Assessment-Competencies of Balance, Dynamic Stability, Core Strength & Aerobic Cardiovascular Endurance are assessed.

	PACER, CAMSA, Plank – Present *CAPL* Questionnaire – not found	Body, and Balance, Stability and Body control skills.	Movement Skills Assessment – Competencies for Locomotion, Object control, and Object Manipulation are assessed. Active Participation questionnaire: Question 1. "Which of the following most closely describes your current level of physical fitness (strength, endurance, flexibility…)?"
D. Perception	Daily Behavior: Pedometer, MVPA score – not found Physical Competence: PACER, CAMSA, Plank – not found *CAPL* questionnaire – Present in 1 question: "I think I do well at activities compared to other children."	*PLAY Fun* Workbook for 18 skills/tasks - Not found	Living Skills questionnaire: Question 6. "Before I make a difficult decision about something, I think carefully about all my options.", Question 33. "I am aware of how other cultures view the importance of the body and movement compared to mine.", Question 34. "When an opinion or idea is given about something, I try to decide if there is good evidence to back it up.", Question 40. "I know where to find the information I need to help solve problems even if it means asking others for help.", Question 43. "I can creatively develop new physical movements and activities that I can try", Question 47. "I often have tender, concerned feelings for people less fortunate than I am."

E. Communication	Daily Behavior: Pedometer, MVPA score – not found Physical Competence: PACER, CAMSA, Plank – not found *CAPL* Questionnaire – not found	*PLAY Fun* Workbook for 18 skills/tasks - Not found	Living Skills questionnaire: Question 8. “I can properly and confidently express myself to let someone know their actions are hurtful to me or others”, Question 9. “I try to get together with a friend(s) to participate in physical activities.”, Question 19. “I am able to easily listen to someone who is talking to me about something important without interrupting them.”, Question 20. “When I get upset, I use more positive ways to work it out rather than more negative ways like teasing, hitting, or taking it out on someone else.”, Question 22. “I try to look at everybody’s side of a disagreement before I make a decision”, Question 29. “I am able to interact with any other student in my class even if they have different beliefs than mine”, Question 30. “I find it easy to compliment others”, Question 36. “I get along well with others.”, Question 41. “I can cooperate well with others to complete a challenging task.”, Question 44. “Before criticizing somebody, I try to imagine how I would feel if I were in their place.”

F. Effectiveness	Daily Behavior: Pedometer, MVPA score – not found Physical Competence: PACER, CAMSA, Plank – not found *CAPL* questionnaire – Present in 1 question: "If you wanted to get better at a sport skill (like kicking and catching a ball), what would be the best thing to do?"	*PLAY Fun* Workbook for 18 skills/tasks - Not found	Living Skills questionnaire: Question 14. "How good you are at physical activities will improve if you work at it."
G. Understanding	Daily Behavior: Pedometer, MVPA score – not found Physical Competence: PACER, CAMSA, Plank – not found *CAPL* questionnaire – Present in 3 questions: "How many minutes each day should you and other children do physical activities that make your heart beat faster and make you breathe faster, like walking fast or	*PLAY Fun* Workbook for 18 skills/tasks – Understanding is assessed in terms of the child's needs to perform a task. According to what they needed before attempting the task, the appropriate box is checked: Prompt, Mimic, Describe, or Demo.	Living Skills questionnaire: Question 4. "I understand how eating nutritious food contributes to my overall health.", Question 27. "Exercise doesn't have to be done all at one time – blocks of 10 minutes are okay.", Question 39. "I *know* a lot of different movements, skills, and strategies that I can use to perform physical activities in a variety of settings."

	running?", "Cardiorespiratory fitness means:...", "Muscular strength or muscular endurance means:..."		
H. Active for Life	Daily Behavior: Pedometer, MVPA score – not found Physical Competence: PACER, CAMSA, Plank – not found *CAPL* Questionnaire – not found	*PLAY Fun* Workbook for 18 skills/tasks - Not found	Living Skills questionnaire: Question 1. "I think that being regularly physically active will help me in other areas of my life.", Question 3. "I plan to exercise regularly next month.", 13. "The reason I would exercise regularly is because I feel that I want to take responsibility for my own health.", Question 25. "The reason I would exercise regularly is because it is consistent with my life goals", Question 49. "The physical activity goals that I set for myself are challenging but ones that I can realistically achieve with considerable effort."

Note: Please see the full descriptions of each tool for more detailed information available online: **CAPL-2**, **PLAY Fun**, **Passport for Life**. *MVPA = Moderate-to-Vigorous Physical Activity **PACER = Progressive Aerobic Cardiovascular Endurance Run ***CAMSA = Canadian Agility and Movement Skill Assessment

By attending to the attributes present within each assessment tool, we can start to see what dimensions of physical literacy are emphasized and what attributes are overlooked. With regard to the eight attributes for 2019, all three tools address four: *A. Motivation, B. Confidence, C. Competence,* and *G. Understanding,* yet attend most closely to the physical domain of movement competence and devote most of their evaluation to quantifying it. Only *Passport for Life*'s questionnaire includes various questions related to *D. Perception* in terms of having an awareness of others and the context, *E. Communication* when addressing others, *F. Effectiveness* regarding how to improve movement performance, and *H. Active for Life*, as in having an inclination to think about doing physical activity during the lifetime. These questions vary according to the age of the students, keeping its language simple for younger children and increasing the complexity for higher grades.

The *CAPL* (HALO) questionnaire focuses on the how the child sees themselves in terms of liking/practicing sport and understanding PE terminology, but does not assess the domains of *E. Communication, F. Effectiveness,* or the inclination to think about *H. Active for Life* engagement. As for *PLAY Fun*, this tool includes comprehension boxes in the form to be filled that track the child's knowledge of each task (attribute G) and their confidence (attribute B) while performing it. The assessor notes if the child needed a prompt, mimic, description or demonstration of the task before attempting it.

In sum, all three tools include attributes *B. Confidence, C. Competence,* and *G. Understanding* even if it is just through one or two questions in their questionnaires. Only one tool, *Passport for Life*, evaluates all attributes, yet not in an equal capacity. As such, we conclude from this analysis that for all three assessment tools, the areas of *E. Communication, F. Effectiveness,* and *H. Active for Life* are underrepresented.

Discussion: Situating Canadian Assessments of physical literacy in the World

While much might be gathered from our attribute analysis, we might take a step back and consider the degree to which our Canadian physical literacy assessment tools, even with our recommended areas for expansion, align with Whitehead's perspective for physical literacy assessment. Whitehead (2010, 2019), who is situated in education, advocates for the charting of an individuals' physical literacy journey. She asserts that "physical literacy is not a state that is attained and then maintained thereafter" (2019, p. 74) and by charting the journey, the philosophical principles are maintained as each participant is viewed as a unique being, not a measure (Whitehead, 2019). To guide the progress of documenting one's physical literacy journey, she is in the process of developing a rubric with 60 descriptors that include the elements of physical literacy along with its attributes to retain the "integrity of the concept" (Whitehead, 2019, p. 76).

Whitehead's qualitative approach to physical literacy assessment, once it is published and put forward, will provide even further guidance to ensure that future iterations of our Canadian quantitatively focused instruments head in the "right direction." But perhaps the rightness of a direction might be questioned too. From a medical research or kinesiological perspective that inform the *CAPL* and *PlayTools* assessments respectively, objectifying the body and movement

serves a purpose. Depending on the funding source or evidence required to implement health-related policies or interventions, quantifications of physical literacy are required.

Where we might place our future focus is to provide further support to help educators, coaches, parents, and even students find the best physical literacy assessment tools for each specific context. Such guidelines have been created in Australia for example, to help with the selection process of the most appropriate physical literacy assessment to be used in a specific context (Barnett et al., 2019), as they note that "almost all assessment and measurement techniques […] reflect[ ] important elements of physical literacy, while also not adequately capturing the entirety of the concept" (p. 121). This reinforces the idea that while a tool might reference an aspect of Whitehead's definition of physical literacy, many are designed according to particular needs (Young et al., 2020), hence the degree to which it puts forth a comprehensive understanding of physical literacy is questionable.

Perhaps then, as we conclude this viewpoint analysis, rather than lumping all three tools together, we might question more closely the purpose each tool serves and the degree to which including all of Whitehead's attributes could be considered a step in the right direction. Without such reflection and contextualization, if we continue to maintain our predominant focus on how competent participants are when performing FMS (attribute *C. Competence*), we will continue to equate meanings of physical literacy with mechanized movement and lose sight of its deeper meaning.

Concluding Thoughts & Recommendations

In conclusion, the main focus of each of the evaluated Canadian tools is the attribute of movement competence (attribute C). It is very interesting to see that despite the overarching aim

of many physical education and sport organizations (e.g., Sport for Life, 2015, 2019), the attribute of becoming *Active for Life* (attribute H) is underrepresented. Neither *CAPL* nor *Play Fun* include any questions that explicitly ask the child to critically think about their willingness or the importance of keeping active in the future. Likewise, *Communication* has also been almost completely overlooked in these two assessment tools. While it is unsurprising that movement performance and cognitive understanding are first and foremost in the minds of most PE researchers, the developers of physical literacy assessment tools and programs might want to consider a more complete understanding of physical literacy in future iterations of physical literacy assessment.

Other countries around the world also have their own instruments or manuals for assessment, and while most of them try to address some of the most prominent attributes in Whitehead's definition, the largest assessment weight undoubtedly belongs to FMS competence and performance. Since the adoption of the term, physical literacy aimed at shifting the subject of physical education away from "a prescribed activity-centred performance model to a person-centred participation model" (Whitehead, 2004, p. 5). We might then ask why we seem to be emphasizing competent performance of movement skills while leaving aside the other dimensions that are supposed to be the backbone of the concept. Future attention could be placed on the underrepresented attributes of *E. Communication* and *H. Active for Life*. If these attributes could be more readily found in physical literacy assessments, they may help those who implement such assessments, along with the students and children who experience them, develop a more comprehensive understanding of physical literacy, which in our opinion, would equate to moving in the right direction.

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Chapter 2

PHYSICAL LITERACY, INTERACTIVITY, AND COMMUNICATION: EMERGENT TEACHER UNDERSTANDINGS

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Physical Literacy, Interactivity, and Communication: Emergent Teacher Understandings

Abstract

Background: Rarely is Physical Literacy understood as a phenomenological concept that takes into account how we are meaningfully and relationally connected to ourselves, others, and the world at large. While the importance of the social and environmental dimensions of physical literacy have been incorporated in more recent conceptualizations of physical literacy, no relational measure or presence exists within current curriculum definitions of physical literacy or assessment tools.

Purpose: This study aims to describe the emergent understandings of the concept of physical literacy from the perspective of new and seasoned teachers with vested interest in PE. More specifically, the focus of this study is to explore how recalling, reliving, and describing a vivid interactive and relationally oriented pedagogical physical activity experience could add to or enhance pre-existing understandings of physical literacy.

Data collection: The main source of information upon which this article is based are three motion-sensing phenomenological interviews with three participants: a seasoned teacher, new teacher, and pre-service teacher, who had recently taken courses in the Faculty of Education at the University of Ottawa.

Data analysis: The main research question guiding this inquiry is: What are teachers' emergent understandings of physical literacy, and to what degree, if any, does their understanding of physical literacy include a dimension of relational connection and communication? The sub-research question is: What experiences inform their emerging understandings of physical literacy? Responses to these questions were contextualized in two motion-sensing descriptions of each teacher situating their understandings of physical literacy in pedagogical interaction. Perceptions of how their understanding of physical literacy developed and changed throughout their interview are also described.

Findings: Mentoring new and seasoned teachers alike to describe what physical literacy means to them within the context of their teaching practice through guided reflection can lead to a more comprehensive understanding of physical literacy. What stood out as a common theme when describing physical literacy in the context of pedagogical interaction was the role of communication. In fast-paced activities, such as playing tag or dancing to a beat, participants have limited time to interact verbally, agree on strategy, or set rules for the engagement. Much is communicated through bodily expressions and gestures, a language that is very much part of the process of becoming physically literate on the part of the teacher and the student. This study encourages us to consider that conceptions of physical literacy should include more than being able to run and jump and perform other fitness or skill related tests which are often equated with physical literacy assessment. More attention is recommended in future research to focus on the least developed aspects of physical literacy, bodily communication and the role it plays in forming relational connections between students and teachers.

Keywords: physical literacy; physical education; expression; communication, relationships

Physical Literacy, Interactivity, and Communication: Emergent Teacher Understandings

Physical Literacy: A Phenomenological or Compartmentalized Concept?

Over the past ten years, the phenomenological-inspired concept of physical literacy has significantly influenced the curricular reform of physical education (PE) worldwide (Whitehead 2010, 2019; Ontario Ministry of Education 2015; 2019; Physical and Health Education Canada 2013). During this period of time, it has been compartmentalized and quantified with the goal of assessing, through a series of fitness, motor skills tests and questionnaires, the degree to which children have the knowledge, skills, and attitudes to become active for life (i.e., McCaffery and Singleton 2013; Longmuir et al. 2015; Edwards et al. 2017a; Nyström, Barnes and Tremblay 2018; Nyström et al. 2018; Dutil et al. 2018; Belanger et al. 2018; Mandigo, Lodewyk and Tredway 2019; Stearns et al. 2019). Whitehead's (2001; 2005; 2007) idea in introducing physical literacy, which was inspired by her doctoral readings of Merleau-Ponty and Sartre, was to trouble such divisive "Cartesian, dualist view[s] of being, which casts the body as a mere mechanism" (Whitehead 2005, p. 2). And yet, this goal is largely misunderstood (Castelli, Barcelona and Bryant 2015; Dudley et al. 2017; Edwards et al. 2017b; Stoddart and Humbert 2017; Robinson, Randall and Barrett 2018; Durden-Myers and Keegan 2019; Harvey and Pill 2019; Jurbala 2015; Dong 2020; Lloyd 2011, 2016). McCaffery and Singleton (2013) analyzed Canadian organizations which offer curricular and assessment support and noted that they neglected to include "conceptions of monism and the value of interaction with the world" in their definitions of physical literacy (p. 8). The definition offered by Physical and Health Education (PHE) Canada, for example states that, "Individuals who are physically literate move with competence in a wide variety of physical activities that benefit the development of the whole person" (PHE Canada 2010, 1). The inclusion of the term 'whole person' in the definition hints at the

possibility of understanding physical literacy as a relational being-in-the-world, yet without elaboration, the tendency to focus on an individual's decontextualized movement competence has "significant consequences upon the teaching and learning of physical education" in terms of how physical literacy is understood (Robinson and Randall 2017, p. 43).

Rarely is physical literacy understood as a phenomenological concept that takes into account how we are meaningfully connected to ourselves, others, and the world at large in a relational capacity (Merleau-Ponty 1962, 1968). While the importance of the social and environmental dimensions of physical literacy have been incorporated in more recent conceptualizations of physical literacy (Cairney et al. 2019), no relational measure or presence exists within current curriculum definitions of physical literacy or assessment tools. For example, when reviewing physical literacy curricular supports and assessment tools offered by PE and coaching organizations (i.e., Sport for Life's "Play Tools", PHE Canada's "Passport for Life", and HALO's "Canadian Assessment of Physical Literacy"), there seems to be a lack of understanding of the phenomenological philosophy upon which physical literacy is based (Robinson and Randall 2017). Furthermore, the communicative side is noticeably underexplored as it is not included in the assessment, even within the domains of Motivation and Confidence (Longmuir et al. 2015). The focus remains on the individual, and in some cases, moving in a disconnected manner where the acquisition and assessment of fundamental movement skills has a stronghold in terms of our research and pedagogical intervention (Longmuir et al. 2015; Edwards et al. 2017a; Belanger et al. 2018; Cairney et al. 2018; Cairney et al. 2019; Caldwell et al. 2020).

Understanding Physical Literacy as a Universal Language of Communication

Just as PE teachers might understand different things when orienting to and aligning their practice with physical literacy (Castelli, Barcelona and Bryant 2015; Dudley et al. 2017; Edwards et al. 2017b; Stoddart and Humbert 2017; Robinson, Randall and Barrett 2018; Durden-Myers and Keegan 2019; Harvey and Pill 2019; Jurbala 2015; Dong 2020), as a second language teacher, I (Laura) have always thought of literacy as an ability to read, write, listen, and speak, and ultimately to communicate with others. Clearly, this communication includes gesturing and movement to convey meaning. When I was introduced to the concept of physical literacy by Dr. Rebecca Lloyd, the second author of this study, I was intrigued to inquire into the idea of becoming physically 'literate' and what it entailed. Moreover, I got involved with the InterActive for Life project (Lloyd and Smith, 2017), which is aimed at building interpersonal and relational connections among ourselves and with the environment, while emphasizing exploring the emotionality of the motion through flow and connectedness to other beings (Lloyd and Smith, 2017). During my participation in some of the InterActive for Life meetings and workshops, I was invited to experience physical activity premised on relational movement awareness and interconnections with others and with the environment. During a mirror walking inter-activity, which invited us to move around the room with a partner in a variety of speeds, levels and directions with no verbal cues, I found myself silently communicating with my partner and developing a whole conversation with just our bodies and faces. Consequently, after teaching languages for many years and having always had communication with others as the main pillar of my practice, I wanted to inquire into the degree to which physical literacy could be understood as a universal language of movement.

Understanding physical literacy as relational and communicative phenomenon moves physical literacy away from its most common misconception, that it is equated to the acquiring and mastering a series of sport-specific Fundamental Movement Skills (FMS) (Robinson and Randall 2017). As embodied individuals, Whitehead (2001, 129) suggests that if we experience relational connections with others when engaging in physical activity "the more fully realised a human, the individual will become". She further adds that a physically literate individual should also "have the interpersonal embodied attributes that facilitate *effective communication* with others" (134, *emphasis added*) and "through a range of senses, appreciates, via experience, the relevant components of the display" (134). Whitehead's (2019) definition of physical literacy as the "motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engaging in physical activities for life" (p. 8) also includes various other attributes, labelled A-H, that help mobilize the concept into pedagogical action. Of particular interest of this study is Whitehead's (2010) attribute E, described as the "Sensitivity to and awareness of embodied capability will lead to fluent self-expression through non-verbal communication and to perceptive and empathetic interaction with others" (p. 14). When Whitehead updated her list of attributes in 2019, it became: "The ability to work independently and with others, in physical activities in both cooperative and competitive situations" and F, "The ability to identify and articulate the essential qualities that influence the effectiveness of movement performance" (p. 12). Hence understanding all attributes of physical literacy might be useful on the road to becoming physically literate. Unfortunately, since the attributes and their complete explanation can only be found within Whitehead's books (2010, 2019) they are often overlooked as they are not included or incorporated in many of the definitions stated by physical education and coaching organizations. As many have noted (Castelli, Barcelona and Bryant

2015; Edwards et al. 2017b; Stoddart and Humbert 2017; Robinson, Randall and Barrett 2018; Harvey and Pill 2019; Jurbala 2015; Dong 2020), the grasp of the concept of physical literacy is still tenuous at best.

Questioning Emergent Understandings of Physical Literacy

Keeping in mind that the way in which a teacher understands a concept has a direct impact on the way in which it will influence their teaching (Jansen, Berk and Meikle 2017), this study aims to describe the emergent understandings of the concept of physical literacy from the perspective of new and seasoned teachers affiliated with the Faculty of Education at the University of Ottawa with vested interest in PE. The focus of this particular study is to explore how recalling, reliving and describing a vivid inter-active and relationally oriented physical activity experience could add to or enhance pre-existing understandings of physical literacy. Accordingly, the main research question guiding this inquiry is: What are teachers' emergent understandings of physical literacy, and to what degree, if any, does their understanding of physical literacy include a dimension of relational connection and communication? A sub-research question related to the overarching research question is: What experiences inform their emerging understandings of physical literacy?

A Motion-Sensing Methodology

As physical literacy emerged as a phenomenological concept (Whitehead 2001), several authors have recommended that it would be beneficial to conduct a phenomenological inquiry to make sense of how it is pedagogically understood (Standal 2016; Stolz 2013; Thorburn and Stolz 2017). Since phenomenology is an umbrella concept (Finlay 2013), it is necessary to define

which phenomenological approach informs one's research. Inspired by van Manen (1997) and the focus of honing in on the felt sense of movement put forward by Lloyd and Smith's (2006, 2015, 2021) **motion-sensing phenomenology** (MSP), interviews were conducted and analyzed with the intention of orienting to the existential connections between participants' sense of lived body, lived time, lived space, and lived other. The intention throughout each interview was to figuratively, practically, and philosophically walk in the participants' shoes as they made sense of the phenomenon in question (Lloyd and Smith 2015).

To guide the quest for meaning, each participant was asked to share a particular experience of physical activity in their respective classes in vivid detail. Following this experience, they were asked to describe what physical literacy meant to them and which words from an Ontario Ministry of Education HPE curriculum definition of physical literacy resonated with them the most. Finally, they were asked to what degree their first description of teaching/leading physical activity related to their conception of physical literacy. As the interview progressed, the participants found themselves digging deeper into what the concept of physical literacy meant to them and the way in which it related to their own pedagogical practice.

Two vignettes were 'written up' from the interviews to better create an experiential sense of movement and the physical activity they were involved in (Lloyd and Smith 2021). Writing up a vignette that describes the fullness of a moving experience is very different than the tendency in social science research to 'write down' transcribed text and analyze it in a decontextualized way. Lloyd and Smith (2021) recommend, for example, when actively creating an experiential text that gives life to a phenomenon in question to ask oneself:

> *Is my write-up indicative of the way these motions function, take shape, feel, and induce a sense of flow? Did I attend to nuances in posture, position, gesture and expression? Does*

> *my written description carry the tone, cadencing and rhythmicity of the motion? Do I sense the description to be an evocation of motional qualities that moves me and others to engage in the practice at hand?* (p. 12).

After the motion-sensing constructed vignettes were constructed from the interview data they were then further analyzed to get a sense of what the participants understood physical literacy to be and to what extent communication and relationality were prominent within their recalled experiences of leading or teaching physical activities.

When two participants related similar experiences with regard to teaching a group fitness/dance class, a composite vignette was created to feature vivid moments that were lived by two of the participants as if they were one person, a strategy often employed in phenomenological research, especially when confidentiality and anonymity is a concern (Spalding and Phillips 2007).

Participants

The participants in this study were former undergraduate and graduate students of Dr. Rebecca Lloyd who took an extra-curricular interest in promoting and experiencing physical activity. Three of five responded to an email invitation to participate in a study about physical literacy, interactivity and communication. One participant was a Seasoned Teacher, the other was a New Teacher, and the third was a Pre-Service Teacher. They were contacted by means of their university emails, sent ethics-approved letters of information and consent forms, and options to schedule an interview over zoom at a time that was convenient for them.

Sources of Information

Each participant was invited to participate in an interview (see the interview guiding prompts in Annex 1) that was audio and video recorded, transcribed, and then analyzed. The

body language and gestures during the interviews were carefully noted and included in the analysis of their answers and their experiences. Special attention was paid to the emergent understanding of the concept of communication within physical literacy, the importance of the kinesthetic relational awareness within PE, and their personal lived experience of physical activities with their students in their professional teaching practice. The 2019 Ontario Curriculum, Grades 1-8: Health and Physical Education (HPE) definition of physical literacy was shared with the participants after the first half of the interview to prompt them to decide which components of the definition resonated with them and what, in their opinion, was missing.

Results: What Their Experiences Tell Us

All three participants started the interview with a pleasant demeanor but were initially rather passive and hesitant during their initial articulations of what physical literacy meant to them. After building some rapport and directing them toward exploring their own experiences more than their knowledge on physical literacy, their answers took a more personal note as their descriptions carried energetic movements of their hands and open expressions in the faces. After each participant shared a particular experience of physical activity in their respective classes in vivid detail, two vignettes were written which exemplify the kind of connection experienced by these three teachers while they engaged in a physical activity with their students. These short vignettes help us to understand how these teachers understand physical literacy within the context of pedagogical interaction. The first vignette describes vivid moments of an exciting tag game followed by an engaging experience of secondary students learning a group dance routine. After discussing their connection with their students, how they were communicating, and what they experienced during those interactive moments, they responded to the HPE curriculum

definition of physical literacy from the province in which they were situated that was shared with them (Ontario Ministry of Education 2019).

Vivid Description of a Seasoned Teacher Playing Tag

The Seasoned Teacher easily recalled a vivid instance where she was physically active with her kindergarten students. She remembered fondly a particular game of tag where she felt a sense of connection to her students. While she mentioned several interactions, the vignette below hones in on one particular interaction where pedagogical connection was deeply experienced.

On this beautiful sunny day, I clearly see Yuki (pseudonym), a five-year-old girl who is part of my kindergarten class getting ready to play tag. She is a small girl who runs when directed and participates in all activities with enthusiasm but in a manner that doesn't always coincide with achieving competitive results. When playing tag, winning for Yuki isn't about dodging whoever is 'it' in a tag game. Rather, it relates to capturing and retaining attention of the tagger, in this case, me, for as long as possible. I feel bombarded by the number of messages I am getting from her without once involving a verbal utterance: She approaches me and by the way she angles her body and gradually slows down just out of reach, I know she wants to get caught. Her eyes look into mine as if they are saying 'catch me, catch me', and I can tell from reading her playful smile that it would be okay to reach out and say, "you're it." The final clue that gives away Yuki's desire to be caught is the way she runs backwards away from me while maintaining eye contact. Running like this means she is not very fast. Her eyes are glued to me, and she does not dare turn around lest our connection be broken. Her wide eyes and open smile show she is very happy to have captured my attention and is trying her best to keep it. I want to prolong the game at least a bit, so I give her time to run away and keep on biding my time before catching her. I finally give in and catch Yuki, making her lose by the official rules of tag, but

ultimately helping her win in her own way and experience the delight in being caught. Her squeals and peals of laughter are enough to show me she is satisfied and happy to have played. Even though she has not yet said "Thank you" verbally, I understand the way she is looking at me while laughing conveys her gratefulness.

What Is Physical Literacy?: A Seasoned Teacher's Perspective

When the Seasoned Teacher described her conception of physical literacy in relation to this game of tag, she was quite sure her students were being physically literate. She defined physical literacy as "not just understanding of the body but also having the skills. It's the understanding of the skills and the ability to use those skills to do physical activity" (Seasoned Teacher February 12, 2021). She further elaborated on her experiences with other students in the tag game who could run quickly in a multitude of directions, dodge her attempts to tag them with ease. When comparing herself to these players she doubted whether she was entirely physically literate herself and said during her interview "I could have the knowledge […] But then, I don't think I have certain skills" (Seasoned Teacher February 12, 2021).

Later in her interview when she took a look at the definition of physical literacy cited by her local provincial Health and Physical Education (HPE) curriculum (Ontario Ministry of Education 2019), she expanded upon her initial articulation of what physical literacy meant to her. When asked what she thought was relevant in the way physical literacy was defined in the HPE curriculum, she highlighted the words confidence, competence, multiple environments, understanding, and motivation. Where she felt the definition of physical literacy lacked was a better and deeper take on communication and how we relate to others, especially those from different cultural backgrounds.

As she continued to describe her thinking on the concept of physical literacy in relation to her recollected experience of interactive physical activity, specifically Yuki in the tag game, she shifted her focus from FMS performance and instruction to a broader, more encompassing concept that could help her make sense of the barrage of messages she was receiving. The way in which she read Yuki's body language and pedagogically responded to the girl's requests with sensitivity attests to this teacher's ability to communicate in and through movement (Sheets-Johnstone 2014, 2018, 2020). Additionally, her experience working with children from different cultures and backgrounds resonated with her belief that physical literacy should account for various contexts and environments, which connects to her ability and willingness to read her students both within her classroom and on the field.

Vivid Description of Dancing to the Beat: A Composite Account from a New and Pre-Service Teacher

A composite vignette was created to unify and blend the voices of two participants, a pre-service and relatively new in-service teacher as they both described their experiences of teaching group dance lessons. Both described a moment that cultivated a sense of positive connection to the dance as well as each other.

For our choreography this time we have a combination of smooth, and sharp and percussive movements. As soon as we start moving, I pay attention to their eyes, especially since with our masks that's the only part of their faces I can quickly gauge their mood from. I'm certain we can all move confidently and energetically in this particular dance sequence. Soon we are in the groove. Sweat drops start to run down most of our faces and I can hear our breathing speed up. Most of them have a fire in their eyes and their movements are flowing easily. In this moment, everyone belongs and there are no students on the side lines. We are moving as a group

and working as a unit. It feels good when we are connected like this and there is unity in our dance. It is kind of like swimming in the ocean while being carried by the waves. I can feel everyone around me even when we are not touching. Eventually, after what feels like forever but was only a couple of minutes, we hear the music winding down, a signal that the end is near. We are exhausted but we are still holding on. Finally, we clap our hands and congratulate each other for completing the steps. Students look up and square their shoulders, proud of having completed the song. A feeling of residual power remains for having succeeded in this dance.

What Is Physical Literacy?: A New Teacher's Perspective

As a person who considers herself to be physically literate, the New Teacher stated communication plays a very important part in whether participants can perform activities presented to them and do them well. She felt her students were becoming physical literacy during her dance lesson since they were being active and staying engaged throughout the entire dance. She felt that she was clearly communicating what they needed to do and in a way that also connected to how they were feeling. Keeping an open mind is a central pillar of her practice as is taking time to reflect after each class and analyze what the students were able to do an adjust her plans for the next day accordingly. When it came to expressing what physical literacy meant to her however, she felt physical literacy is just another way of referring to the FMS students should learn in their early years that enable them to participate in activities such as her secondary level dance classes and enjoy physical activity fully in the future.

When asked to say more physical literacy, the New Teacher said more about FMS and the disparity in access to opportunities to practice PA outside schools, especially in relation to socioeconomic status. She raised concern for many of her students who had a lack of physical literacy given their low motivation levels to engage in PA and their inadequate previous

schooling experience at the elementary levels. It was easy to pick out those did not have enough instruction about FMS and their resulting apathetic attitude toward PA, a perspective captured in the following interview excerpt.

> *If they don't value or know how to do simple movements, or like the Teaching Games for Understanding where you work on target practice, and you work on offense and defensive tactics… if that's not developed at a young age [...] they don't value or see the importance of still participating in physical activity and then being active for life, because they didn't get those fundamentals.* (New Teacher February 17, 2021)

When presented with the definition of physical literacy in the Ontario HPE curriculum (Ontario Ministry of Education 2019), the terms that resonated with her the most were 'whole self,' 'healthy active choices,' 'motivation,' 'confidence,' and 'competence.' In terms of what the definition lacked, she also expressed a need for it to include how our "understanding and almost self-awareness of how movement plays a role in how we feel" (New Teacher February 17, 2021). physical literacy, for this teacher, is not just based on movement competence.

What Is Physical Literacy?: A Pre-Service Teacher's Perspective

When asked about her understanding of physical literacy, the Pre-Service Teacher commented it is "a confidence in my physical movements. It is to have an understanding of spatial awareness, body movements, how to manipulate an object, and how that all comes together in various sports and athletic endeavors" (Pre-Service Teacher February 19, 2021). However, when asked about what the term might mean for her students she said, "for my students to be physically literate, it would be them being comfortable, and eager to participate in all the different sports skills in games that we were doing in a course" (Pre-Service Teacher

February 19, 2021). What one can infer is that when it comes to herself, physical literacy seems to be more about mechanistic movement performance and when it comes to her students, physical literacy appears to encompass a more holistic view of movement and physical activity. After speaking about her experience being active with her students in the group dance lesson, she highlighted the importance of interaction with others, objects, and the environment as key aspects of physical literacy, which she later related to the ability to read the game when playing team sports and communicating successfully with teammates. She then elaborated on her conception of physical literacy by relating it to her experience of being a hockey player. She said she knew first-hand what playing a team sport entails in terms of communication, and she illustrated her point by saying oftentimes the player does not yell what they want, their bodies project their desire and invite their teammates to comply.

The Pre-Service Teacher chose various words that resonated with her from the HPE curriculum definition of physical literacy (Ontario Ministry of Education 2019) that was provided to her, words that stretched her initial gravitation of aligning the concept with the physical aspect of performing movements. The keywords that stood out for her were: ‘confidence,’ ‘competence,’ ‘analyze,’ ‘creatively and strategically,’ and ‘respectful.’ Most of these words align with a more holistic and relational definition of physical literacy, where students are moving confidently and competently, while exhibiting other skills like analyzing themselves, others and their surroundings, and responding to all of it in creative, strategic, and respectful ways.

Hence, similar to the New Teacher, the Pre-Service Teacher initially regarded FMS as the main pillar of physical literacy, but after discussing the concept some more, the words that resonated with her encompassed much more than just moving their bodies in a certain way or

being able to play sports. The concepts both teachers gravitated towards related to knowing others and knowing themselves, which indicates a sense of emergence and deepening in terms of understanding physical literacy means to her. They also related their ideas of physical literacy to their pedagogical practice.

Discussion

What Our Expressions Communicate

The longer all three teachers talked more about interactivities they experienced with their students in the context of pedagogical interaction, the aspects of communication and relationality began to play a more prominent role in their understanding of physical literacy. Both the Pre-Service Teacher and the New Teacher in the dance class, for example, were able to understand what the students were telling them with their facial expressions and the positions of their bodies and respond accordingly. Similarly, the Seasoned Teacher interacted playfully with her students and did not judge the different interactions she saw, such as Yuki who projected palpable feelings through her eyes which communicated that she wanted to be caught and not play the game by the traditional offensive and defensive rules (Lloyd 2017). Despite thinking she was not physically literate herself, this Seasoned Teacher was very good at reading what her students wanted and needed within their experience of tag. She went on to say it was not just showing what her intentions were, but also having the ability to read the other person's intention and understanding the meaning communicated in the subtle reading of the eyes. Interestingly, while at first she had related the idea of physical literacy to the ability to execute movement skills, she started to question her own position and, by the end of the interview, she had a broader perspective of what the term could entail.

Even when a teacher has not specifically spent time studying psychology, after some classroom experience most become adept at reading their students' body language as well as better connecting to their own. Understanding emotions by taking a look at what the eyes of the participants are expressing plays a key role in knowing when to change activities, take a break or clarify something. During this COVID-19 world pandemic, reading the eyes has become even more crucial since masks cover at least half of our faces. Consequently, as the New Teacher remarked, it is important for her to appear to be open and approachable with only her eyes while wearing a mask, so her students perceive her as receptive and engaged. We might discern that physically literate teachers can be able to project, read and sense emotions expressed by themselves and their students even in the presence of face coverings due to the pandemic.

Assessing students' expressions could be the easiest and fastest way to gauge how motivated and interested their students are. All teachers commented on how reading students' body movements and facial expressions helped them to understand how engaged their students were in the physical activity, which is still an important part of physical literacy. Responding to student levels of motivation (or a lack thereof) falls within the realm of what the PE teacher needs to deal with on a daily basis. Knowing how to accurately discern the level at which the students are engaged with a certain activity affords teachers opportunity to modify or completely change what is being experienced.

New Frameworks for New Understandings

Regardless of how experienced the participants in this study were, none of them showed a clear and complete understanding of what the term physical literacy means, similar to what was reported by Harvey and Pill (2019) in their study. It does not come as a surprise that they all had an initial understanding of physical literacy that equated to Fundamental Movement Skills,

which is a common misunderstanding among teachers (Robinson, Randall and Barrett 2018). Nevertheless, after their participation in the interviews, they all began to look at physical literacy differently and reflected on how physical literacy was also part of their practice. It is interesting to note that FMS are not mentioned in the curriculum definition of physical literacy (Ontario Ministry of Education 2019), and none of the participants made this observation.

After sharing and discussing their interactive pedagogical experiences, all participants made reference that communication and relating to others while being physically active was extremely important. The longer they discussed what physical literacy meant to them, their perspectives shifted considerably when they situated the concept of physical literacy in their teaching practice. All three educators felt relationality was very important, but at the same time it was not the first thing they recalled when asked about what they knew about this concept. The Seasoned Teacher was especially concerned with the inclusion of cultural differences and backgrounds within the HPE curriculum definition (Ontario Ministry of Education 2019), due to her own experience with students from various parts of the world.

Learning how to accurately understand the messages conveyed by their students has a definite relation to physical literacy, which could in turn help with better rapport and motivation in the classroom. Aside from the verbal communication needed to explain the activity or direct their students, all the participants relied heavily on her bodies, especially keeping their shoulders back, chest open, and head held high, and on her faces to convey their confidence, interest, openness, willingness, and to extend their invitation to be interactive together. We mostly think of language and communication in terms of verbal expression and comprehension, but it does not occur in a way that is separate from body language since “our tactile-kinesthetic bodies are expressive in and of themselves, that is, in moving and gesturing in addition to uttering words”

(Sheets-Johnstone 2018, 8), and as such, to communicate with our bodies seemed to be a key dimension of physical literacy for these teachers.

The tag game and dance class vignettes depicted high levels of participation and motivation during the respective activities. This was greatly aided by the relationship each teacher had with their students, i.e., that they created an atmosphere where they felt "safe, accepted and engaged" (Castelli, Barcelona and Bryant 2015, 159). Additionally, the descriptions of PA were contextualized in a game of tag and a choreographed dance, levels of motivation were at a peak (Hyde, Maher and Elavsky 2013). Each activity was adjusted in a way that made it easier to keep students interested and to invite them to just to enjoy the activity and have fun, which in turn is an undisputed link between PE participation and PA during free time (McDavid, Cox and McDonough 2014). As Hyde, Maher and Elavsky (2013), state "children are physically active when they enjoy the activity and get a sense of accomplishment out of it" (p. 100). Likewise, within the contexts described in these vignettes, the environments fostered safe and contextualized spaces for students to participate in PA for children, making it possible for the participants to "acquire specific relationships between the players" (Nosirova 2020, 939) and to learn how to manage and improve them (Cranmer and Myers 2015).

Conclusion and Implications

Mentoring new and seasoned teachers alike to describe what physical literacy means to them through guided reflection, like what was experienced in the motion-sensing phenomenological interviews that formed the basis of this study, could lead to a more comprehensive understanding of physical literacy in a way that is empowering and rooted in pedagogical practice. What stood out as a common theme when describing physical literacy in

the context of pedagogical interaction was the role of communication. In fast-paced activities, such as playing tag or dancing to a beat, all participants have limited time to interact verbally, agree on strategy, or set rules for the engagement. Much is communicated through bodily expressions and gestures, a language that is very much part of the process of becoming physically literate on the part of the teacher and the student. This study encourages us to consider that conceptions of physical literacy should include more than being able to run and jump and perform other fitness or skill related tests which are often equated with physical literacy assessment (Longmuir et al. 2015; Edwards et al. 2017a; Nyström, Barnes and Tremblay 2018; Nyström et al. 2018). More attention is recommended in future research to focus on the least developed aspect of physical literacy, bodily communication, and the role it plays in forming positive relational connections between students and teachers.

In addition, after describing and analyzing the emergent understandings of the three teachers that participated in this study, we believe the door to innovative ways of researching the ways physical literacy may be pedagogically understood has been opened. Being such a broad concept, it is no wonder different people associate it with various aspects that align closely with their own perception or practice. For a teacher who likes having a nurturing environment for her young students, communication plays a key role. Similarly, for someone working in an international school, being aware of what is being communicated in and through movement is important when connecting to students from different cultural backgrounds. It is not surprising physical literacy might take on another meaning closely related to physical skills if the teacher wants to prepare the students for a sports competition, or keep participants motivated if the educator is introducing a fitness-focused lesson.

As with any research project, there are limitations to be addressed. Due to the nature of the interviews and research interest, it could be argued that the interview questions could have influenced the way in which the participants analyzed and replied to the concept of physical literacy and are thus a product of the interaction with the researcher. This should be kept in mind when drawing conclusions and thinking about the capabilities of communication within physical literacy. Further studies could use a different data gathering method or other questions to disturb the way physical literacy is understood.

Whatever the need, physical literacy remains an important curricular concept at the heart of countless Physical Education curricula around the world. As any other literacy, its importance transcends a subject taught at school and affects a number of facets of a person's life. If we think about staying physically active for life, understanding and analyzing principles of holistic embodied health, our ability to work alone or with others in a group, or responding to varied situations with creativity and imagination, we are talking about everyday events that are related to physical literacy in some way. As such, we are convinced further study and development of more comprehensive physical literacy assessments and resources would greatly benefit teachers and students alike. The possible applications of physical literacy are varied and wide as long as its holistic conception remains at the forefront of our understanding.

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Annex 1

Interview Prompts

- I understand you are becoming a physical education teacher, what inspired you to teach HPE?
- If you were asked to make up your own definition of Physical Literacy what would you say? Please situate this definition/description in an example that you have experienced. (*N.B. after they describe it ask at what moment in your example were you becoming physically literate? Tell me about the journey or process of becoming physically literate)*
    - Have you always thought this way about PL? Tell me about the time when you first heard the term PL. Where were you? What was the context? What initial ideas came to your mind?
    - Are there experiences that have challenged or deepened your initial perceptions and understandings of PL? Please describe these experience(s).
- Here is the definition of PL in the Ontario HPE curriculum – what descriptive words stand out or resonate with your current understanding?
    - If you were asked to modify this definition, what would you change and why?
- Tell me about/describe how 'physical literacy' relates to other forms of literacy.
- Does communication play a role in your understanding of PL? Please contextualize your response with an example.
- I understand that you have participated in the IA4L project. What motivated you to participate in it?
- Did the online situation impact your experience of the InterActivities?

- Given the current covid-19 self-isolation circumstances, can you describe what it is like to teach? What are some challenges? What are some opportunities?
    - What do you think we need to focus on in terms of relative importance?
    - Can you relate or contextualize this focus within the concept of Physical Literacy?
    - If so, can you describe what it means to become physically literate in our current Covid-19 context?
- Can you remember a time when you were particularly active with your students?
- Were they communicating? How
- What were they/you feeling/seeing/saying/expressing?
- Let's go back to your example…
- Were they becoming PL?
- **As you experienced this InterActivity**, is there a moment when you felt more/less connected to your partner? Describe how this connection changed as you experienced the interactivity. If you continued to practice this interactivity what signs/feelings would indicate that you are developing Relational Awareness? Does this relational connection play into your understanding of physical literacy?
- **As you experienced this InterActivity**, was there a particular moment in which you felt more or less aware of your body? If so, was there a part of your body that you felt more (i.e., head, shoulders, torso, hands, hips, legs, feet)? What was it like to become more aware of this body part as you experienced this interactivity? How did this body awareness affect your sense of relational connection? Does this sense of relational body awareness play into your understanding of physical literacy?

- **As you experienced this InterActivity**, describe the way you experienced the sense of connection with your partner though space? Did the felt sense of connection change through space as you experienced the interactivity? Were their moments when you felt more connected than others? How did the distance between you play into this sense of connection through space? Did you sense a connection to other people/things/your environment through space? How did this connection play into your experience? Does this spatial connection to your partner/others/the environment play into your understanding of physical literacy?
- **As you experienced this InterActivity,** describe your experience of time. Did it fly by? Did some moments seem to stretch or last longer? Did you experience a rhythm in your interactivity? Describe this rhythm. Was it consistent and predictable? Did you experience any sudden surprises? Does this experience of relational time play into your understanding of physical literacy?
- How important do you think it is to experience relational, human connection? How important do you think this relational, human connection is included in the way physical literacy is understood?
- Now let's look at PL during your participation in the IA4L project…
- Was there a moment when you felt PL?

Here is the definition of PL in the Ontario HPE curriculum – what descriptive words stand out or resonate with your current understanding?

- Does it resonate with you?
- If you were asked to modify this definition, what would you change and why?
- Which words resonate with you the most?
- How important do you think it is to experience relational, human connection?

- How important do you think this relational, human connection is included in the way physical literacy is understood?

Conclusions

Final Takeaways

After delving deep into the way physical literacy is assessed in Canada and describing and analyzing the emergent understandings of three teachers' perceptions of physical literacy, I believe the door to endless possibilities has been opened in regard to possible analysis avenues within Physical Literacy. Moving away from PHE and exploring how this concept could play a role in multidisciplinary environments might shed some light on issues that are perceived to be unrelated to movement and body language, but which, as seen in previous chapters, touch upon multiple fields including language teaching, psychology, and sociology. Being such a broad concept, it is no wonder different people associate it with various aspects closer to their own perception or practice. For a teacher who likes having a nurturing environment for her young students, communication plays a key role, while for someone working in an international school, being aware of different backgrounds and cultures was felt as crucial. It is not surprising physical literacy might take on another meaning closely related to physical skills if the teacher wants to prepare the students for a sports competition, or for it to move towards keeping participant motivated if the educator is dealing with Daily Physical Activity sessions.

Whatever the need, physical literacy remains an important curricular concept at the heart of countless Physical Education curricula around the world. As any other literacy, its importance transcends a subject taught at school and affects a number of facets of a person's life. If we think about staying physically active for life, understanding and analyzing principles of holistic embodied health, ability to work alone or with others in a group or responding to varied situation with creativity and imagination, we are talking about everyday events that are related to physical literacy in some way. As such, I am convinced further study and development would greatly benefit teachers and students alike. As we understand the role of communication and how to guide students better toward acquiring a language, more materials and approaches could be developed, which could include explicit items that deal with body language and the importance of relationality in human interactions. The possible applications of physical literacy are varied and wide as long as its holistic conception remains at the forefront of our understanding.

A Learning Experience

Engaging in these descriptive studies afforded me the opportunity to deeply analyze the assessment tools available in Canada in relation to the definition of physical literacy and the emergent understanding some teachers had related to this concept and the role communication played within it. Thinking about body language as a type of language instead of classifying it as secondary to verbal communication gave me a different perspective on the way it relates to learning a language. While we have advanced and developed the initial concept of physical literacy, there is still room for improvement in terms of better understanding of the term and a more balanced distribution of the importance of each of its parts. Fundamental Movement Skills are still the central part of assessment tools and practices all around the country, leaving aside most of the other components that make up the complete definition of physical literacy. Further work could be carried out toward the development of even more complete assessments and pedagogical materials dealing with physical literacy, especially taking into account there is no mention of FMS within the definition of physical literacy.

For conducting this type of research, it is necessary to attune yourself with your participants and to look beyond the words you're hearing or reading. My quest for meaning required listening and watching the data I collected through recorded interview videos many times and as I tried to make sense of the physical literacy experiences of the teachers. As for the process of writing, it was very rewarding to arrive at quality products that will add more to our knowledge about physical literacy and its applications. At times it was not easy to have the vivid descriptions speak to me or convey all the feelings the participants had shared. Oftentimes it required listening to their story and trying to retell it by using strong and descriptive words that could aid the reader to picture the situation in their mind.

After writing the articles, a lot of editing was required, not only to polish the language and make sure the flow was there but also to comply with journal guidelines. At one point the second article was 40 pages long, when the maximum length required for submissions was 28. This necessitated a lot of changes and difficult decisions regarding what information was more important and what ideas had already been stated. The decision to have a composite vignette instead of two vignettes for the last two participants greatly helped reduce the space and to

summarize their perspectives and ideas related to interaction and communication. Thankfully both teachers had described a group dancing activity with one of their middle school classes, so the InterActivity was similar enough to be described using one vignette and the perception of both teachers.

Difficult and Favorable Situations

The initial idea that was submitted to the thesis committee involved interviewing participants who had been deeply involved with the InterActive for Life project (IA4L) led by Dr. Rebecca Lloyd and Dr. Stephen Smith. Nevertheless, due to the health crisis and shifting responsibilities of the expected participants invited to participate in the study, the inclusion criteria had to be modified to include teachers from the Faculty of Education that had an interest in Physical Literacy with or without prior participation in the IA4L project. Thus, only one of the participants had engaged in various IA4L workshops and meetings while the other two had only participated in one presentation and one InterActivity. Hence, the original research questions submitted in the proposal had to be modified to better serve the objective of describing the emergent understandings of physical literacy and communication within it, while keeping in mind the participation in the project had been minimal in some cases. The original questions were:

- What are the InterActive4Life project participants' emergent understandings of physical literacy? To what degree, if any, does their understanding of physical literacy relate to being a physical language of communication?

While the sub-research questions included:

  - What experiences inform their emerging understandings of physical literacy?
  - What experiences, if any, situated within the IA4L project, contribute to their emergent understanding of physical literacy?

The modified questions were:

- What are the participants' emergent understandings of physical literacy, and to what degree, if any, does their understanding of physical literacy relate to being a physical language of communication?

And the sub-research question was:

- What experiences of physical activities with their students inform their emerging understandings of physical literacy?

Another difficulty I experienced was the recruitment of candidates. During our initial talks, Dr. Lloyd had suggested approaching the participants in the workshops with the idea of being part of the study, but after the pandemic, I was not able to attend any more workshops since the online schedule for them conflicted with my work. Dr. Lloyd sent an email to the participants outlining my project and contact information so the interested parties could follow up with me on their own accord, unbeknownst to Dr. Lloyd. Two people expressed their interested and contacted me to become participants in my research. The third participant was a teacher I had some courses with and who also participated in the face-to- face IA4L workshops. Two of the participants I had also met during the workshop did not reply to the invitation to participate and were thus discarded. This left me with three willing participants that agreed to the interview and promptly met with me via Zoom.

Regarding the online interviews, conducting them via Zoom and recording the videoconference might have helped lower the anxiety of the participants because the recording equipment was not visible and they were all in familiar places to them. As for the difficulties, scheduling the sessions and keeping in contact with the participants was affected by the pandemic and the general situation of unrest. Luckily it was possible for all of us to attend our interviews and none needed to be rescheduled. All three participants were glad to participate and help with the project and did so with a positive disposition.

It was very interesting to see the shift in attitudes of all three participants throughout the interview. While at first they were all convinced physical literacy meant something akin to Fundamental Movement Skills (FMS), as their telling of their experience went on, they started to realize there were many other things at play in their lessons. All of them felt communicating with their students was important for their rapport with them and the development of their activities, but they also described different types of language that usually did not involve words.

Enriching Knowledges

Since it was the first time, I have attempted to carry out phenomenological interviews, the way to write and pose the questions to the participants was not as straightforward as other interviews if have done in the past. Getting the participants to describe an experience instead of giving an opinion on the topic required careful wording of the questions and redirection in case they got sidetracked. All participants were eager to share their opinions with me and had some trouble getting to the description of a particular activity. The new teacher and the student-teacher both started by telling me about generic experiences and generalized perceptions of what they thought physical literacy meant in their classes or how students sometimes interacted with them. Eventually, both of them told their dancing class experience and through some additional questions, the retelling became more vivid and descriptive.

Thanks to Dr. Lloyd's guidance, I was able to produce a phenomenological text that searched for meaning within the teachers' experiences and described in detail what the participants were feeling or experiencing at the time. Writing the vignettes was at the same time difficult and hard since writing in prose comes easily to me, but the words to make the reader stand in the participants shoes were sometimes elusive. My supervisor's help was of the utmost importance since she was the first to point out where the description was falling through or if there might be something else there if I explored it further. Her experience with phenomenology was invaluable to understand the philosophy behind it and the different perspectives offered by various authors.

Evolving Interests

In the future, I would like to investigate what language teachers understand about the importance of physical literacy and the close relation it has to their practice even when they are not PE teachers. My interest in multidisciplinary approaches to language teaching stems from years of frustration trying to get different results by applying the same techniques as delineated by curricular supports. Finding out more about the role of body language might make it easier for language teachers to help students attain proficiency and natural patterns of speech without much trouble and by keeping them as the center of their practice.

On the other hand, continuing to research what teachers understand in the context of PE could yield interesting results that could potentially inform new or more complete physical literacy assessments where a more holistic view of the person is attained. Additionally, just by exploring this concept together with the teachers their understanding of the concept went further than what they thought they knew. Exploring high school teacher perspectives or those of coaches could shed more light on the way Canadian PE educators are dealing with curricular direction. It could also be worthwhile to learn what the students' ideas are regarding this concept and the way they experience it at school.

After successfully submitting these two articles, I feel the next step could be researching how physical literacy could relate to second language learning and teaching and continue to publish in English as a Second Language (ESL) journals. I will probably choose the thesis by article format for my Ph.D. thesis, since I feel this experience has been inspiring and enriching enough to encourage me to embark in this next endeavor.