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What it Means to be a Learner and What it Means to Learn and Know in Movement Skill Learning

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ABSTRACT

The aim of this paper is to suggest perspectives on movement capability and movement skill learning that take into account the intrinsic, meaningful value of moving in terms of the experience of the mover as a learner and a knower. Two perspectives on movement capability and movement skill learning will be presented and discussed here: phenomenology and phenomenography, with a focus on phenomenography. Since some similarities between these two perspectives has raised questions and caused some confusion, this paper attempts to clarify, mainly through empirical examples, some significant similarities and differences. An overall difference is that phenomenology is concerned with the question “what does it mean to be a learner?”, while a central question for phenomenographic oriented research is instead: “what does it mean for learners to learn and know what is expected to be known?” Both approaches share an interest in acknowledging the perspective of the learner.



KEYWORDS

Movement capability;
movement skill learning;
phenomenography;
phenomenology

Introduction

The main concern of this paper is to suggest perspectives on movement capability and movement skill learning that take into account the intrinsic, meaningful value of moving in terms of the experience of the mover as a learner and a knower. Two perspectives on movement capability and movement skill learning that emphasize the perspective of the mover will be presented and discussed: phenomenology and phenomenography, with a focus on phenomenography. Since the similarity between these two perspectives has raised questions and caused some confusion, an additional aim is to clarify, mainly through empirical examples, some significant similarities and differences.

Some years ago, when I had an ongoing discussion with PETE-students about the main aim of physical education in Sweden, many students expressed (as most students did and still do) that their future main professional task was to inform their students about the (physical) health benefits of being physically active and taking care of one’s body. I used to reply to this by saying “do you really believe that 14-year old kids pack their sport equipment and hurry to the football or dance practice so they won’t get ill in the future?” When they reflected on this example, many students seemed to remember why, when they were the same age, they took part in different sport activities. Their answers were actually

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along way from any kind of (physical) health argument. Instead, their answers reflected the results in Engström (2008) large longitudinal study on participating in physical activity: namely, a range of different meanings that people ascribe their participation in activities such as hiking, dancing, playing ball games, gardening, walking, biking, swimming etc. Engström could show that both adolescents and adults participate in physical activities not foremost for physical health benefits but rather for the possibility to experience play and recreation, to enjoy oneself “for the moment” or for the learning of skills (p. 336). These are insights into the meaning-making of physical activity and movement learning I regard as significant for educators in these areas to acknowledge.

For many years now, there has been a call from scholars to acknowledge the subjective and experiential aspects of knowing and learning in moving. The need to take into account the perspective of the learner, along with stressing the subjective, intrinsic value of moving and playing, has been an urgent issue for many researchers interested in movement skill learning (see e.g. Brown & Payne, 2009; Jones et al., 2016; Kretchmar, 2000; Nyberg et al., 2020; Standahl & Engelsrud, 2013; Standal & Bratten, 2021; Stolz, 2013). Despite this interest in research, studies on movement skill learning in practice show that generally, movement education pedagogy still reflects the observer’s perspective, leaving aside the perspective of the learner (see e.g. Abernethy & Zawi, 2007; Iserbyt et al., 2010; Laguna, 2008; Magill, 2011). Although research in the area of motor learning has contributed massively to the knowledge base regarding movement skill learning, there has been criticism of the underpinning dualistic approach to learning, separating mind and body and, as is the case in practice, focusing on the observer’s perspective (Barhama, 2019; Barker et al., 2020; Tinning, 2010) thereby marginalizing the perspective of the learner.

The choice of presenting phenomenography and phenomenology as non-dualistic approaches which take into account the perspective of the learner is not to dismiss other perspectives with similar focus. There is, since a long time, a growing body of research suggesting perspectives on movement skill learning that are also learner centered and non-dualistic in various ways. These perspectives include the theory of nonlinear pedagogy informed by ecological dynamics (Chow, 2013), the constraints led approach (Renshaw et al., 2016), complex learning theories (Light, 2008) and the philosophical model of practicing (Aggerholm et al., 2018). These approaches to movement learning challenge the individual-environment dualism (Larsson, 2021). The theory of nonlinear pedagogy for example, emerged from an insight of how movement learning is influenced by the relationship between what the individual brings to the practice; what the environment affords the person, and what the task demands (Zelaznik, 2014). However, as researchers have pointed out, there is still a need for research on movement skill learning that in more depth acknowledge the experience of the mover as well as a holistic view of the body and mind as an indivisible whole.

As an alternative or complementary approach to the prevailing dualistic perspective in motor learning research on body and mind as separated, scholars have emphasized the benefits of phenomenology as a way to explore and acknowledge movers’ sensuous and subjective experiences when participating in movement learning and movement activities. These scholars present a holistic perspective on the moving human being and emphasize the importance of embodied self-knowledge as an educational aim (Standahl & Engelsrud, 2013; Standal & Bratten, 2021; Stolz, 2013; Thorburn & Stolz, 2020). Similarly, a phenomenographic approach to investigating the meaning of movement capability as

well as movement learning has been shown to be beneficial in acknowledging the perspective of the mover, while at the same time challenging the dualistic notion of knowledge as either theoretical or practical (Bergentoft, 2020; Nyberg & Carlgren, 2015; Nyberg, 2018).

What characterizes phenomenology and phenomenography is the non-dualistic view on body-mind and thinking-acting as an integrated whole thus not as two phenomena interacting and influencing each other. In this sense, phenomenography and phenomenology provide a non-dualistic conception of the body, and knowledge as embracing theoretical as well as practical knowledge, which contribute to a differentiated understanding of what there is to know when learning movements (Marton, 1981; Standal, 2021). Additionally, these perspectives provide possibilities to understanding learners' meaning-making of movement learning (Nyberg & Carlgren, 2015; Standal, 2021).

In the next section of the paper, I introduce phenomenology and the benefits of a phenomenological approach to exploring the subjective and intrinsic value of moving in different ways and in different contexts. Phenomenology can answer the question of what it means to be a learner, an aspect beneficial to both studying and engaging in movement learning. I then present phenomenography as another useful approach to studying and engaging in movement learning. Phenomenography can provide answers to the question of what there is to know, from the perspective of the learner, when learning something specific (for example moving in specific or different ways), as well as how to help learners develop their knowing regarding this something. Additionally, phenomenography has been helpful in research on what movement capability can mean, as will be described in more detail later.

Phenomenology and movement skill learning

Phenomenology, as developed by Edmund Husserl, was partly a reaction to scientific taken-for-granted assumptions about the meaning of concepts and different phenomena in the world. Husserl had the ambition to question and problematize what he called “habits of thought” in order to find out, and revisit the essence of different phenomena. In Husserl’s words, “returning to the things themselves” (Allen-Collinson, 2016, p. 4). The term phenomenology has its origin from the Greek *phainomenon*, which means something upon which light is shed, a phenomenon that appears to us and that we consciously experience (Allen-Collinson, 2016).

In the area of philosophical phenomenology there are two overarching strands where Husserl’s transcendental/descriptive phenomenology represents one path, whereas the other is described as existentialist phenomenology. The latter strand has a stronger focus on exploring “the body-world-consciousness nexus, portraying these as fundamentally braided, intertwined and interrelating” (Allen-Collinson, 2016, p. 5) which means a strong relation to the body, embodied learning and moving. Due to this focus, existentialist phenomenology has inspired research on participation in movement cultures, movement learning and physical education (Standal & Bratten, 2021; Stolz, 2013). Existential phenomenology can be described as a way of thinking about the body, the mind and what it is to be in, and to experience the world rather than seeing these phenomena from an observer’s point of view. Stolz (2013) describes how Merleau-Ponty, a well-known existential phenomenologist, highlights the body and mind as a unit, not as two distinct things. Being in the world is not foremost a matter of engaging our cognitive abilities but rather, being in the world is about engaging our emotional, practical, aesthetic and imaginative

powers. We come to know the world by being in, acting in, sensing and experiencing the world. Philosophers interested in phenomenological approaches are interested in the subjective, experienced essence of phenomena in the world. Such phenomena can be of different kinds including concepts; nature; one's body; learning and participation in PE-lessons.

The procedure in which the essence of a phenomenon is elucidated is basically a philosophical research process, unlike the empirical procedure which identifies common features of how people experience a phenomenon (Martínkova & Parry, 2011). But before continuing this presentation of empirical phenomenology it should be noted that in phenomenological literature there is an ongoing discussion about what characterizes “true” phenomenological empirical studies and that many empirical studies may instead be considered as merely qualitative studies rather than phenomenological (Allen-Collinson & Evans, 2019; Martínkova & Parry, 2011). However, the aim of this paper is not to elaborate on this discussion, which has been done elsewhere (see e.g. Martínkova & Parry, 2011; Standahl & Engelsrud, 2013). I have instead chosen to adhere to Standahl and Engelsrud (2013) position, that is, empirical studies informed by phenomenology are to be conceived as such and that they are an important contribution to the research on embodiment in sport and physical education.

Some years ago, scholars interested in phenomenology stressed a need for phenomenological empirical research on the intrinsic value of moving, on the grounds that such a perspective on the mover was lacking in research on physical education (Brown & Payne, 2009; Thorburn, 2008). There is still, I believe, a need to highlight the cultivation of the subjective identities in physical education, since the experiential perspective is scarce in the practice of movement education in school. Both Standal and Bratten (2021) and Stolz (2013) emphasize the educational value of being physically educated in terms of embodied self-knowledge, even though all the benefits of embodied self-knowledge may be difficult to anticipate (Stolz, 2013). Thorburn and Stolz (2020) highlight the value of using phenomenological empirical methods to better understand learners' experiences.

In a recent conceptual paper, Block et al. (2021) emphasize the benefit of pursuing phenomenological objectives that promote meaning, awareness, understanding, and sensitivity of self and others through movement in physical education. These objectives are reflected in a range of phenomenologically inspired empirical studies on participation in movement activities and movement learning (see e.g. Aggerholm & Larsen, 2017; Brown et al., 2008; Clegg & Butryn, 2012). In order to understand common aims and features regarding the results of this kind of research, as compared to phenomenographic approaches, I now present some examples of empirical studies informed by phenomenology.

With the aim of challenging the “often media-driven, media-hyped functionalist purpose of participating in physical activity,” Brown et al. (2008, p. 2) explored different ways of sensing and feeling that people experience when participating in movement activities. By doing so, they also challenge the dominant view of the body in exercise sciences, which is characterized by the epistemological assumption of technical rationality. In their paper, Brown et al. (2008) present four vignettes showing different ways of sensing and feeling that the authors have experienced while moving, teaching, and leading movement activities such as dance, outdoor education, sport, coaching and fitness. The vignettes serve as rich descriptions of their feelings and awareness of issues in which they are acting. It is

emphasized that these experiences are crucial for the mover and should be acknowledged in educational contexts. The authors also describe these subjective, intrinsic experiences as different ways of knowing, which is a concept to which I return later when I consider the phenomenographic approach to studying movement learning.

Clegg and Butryn (2012) investigated how people, when practicing parkour and free-running experienced their “bodily sensations, emotions, thoughts and meanings, as well as how risk is felt within these experiences” (p. 324). Their theoretical framework was based on existential phenomenology informed by Merleau-Ponty’s philosophy of embodied consciousness, which they describe as a robust research method that can provide rich and detailed descriptions of experiences within sport. Through open-ended phenomenological interviews, the authors present richly detailed and nuanced descriptions of participants’ experience of doing parkour and free-running. Two overarching themes, describing the structure of the experienced phenomenon (parkour and free-running) were constructed; *bodily experience* and *interactive experience* in which the first involved three sub-themes named *play*, *movement* and *risk* while the latter involved *interactive-community*, *interactive-public*, and *interactive-world*.

In a similar vein, the experience of the phenomenon parkour, was also studied by Aggerholm and Larsen (2017). They added to the existential phenomenological perspective the notion of acrobatics as developed by Sloterdijk’s (2013, referenced by Aggerholm & Larsen, 2017) analyses of verticality and acrobatic existence. Practitioners’ experience of practicing parkour resulted therefore in a different experience to that reported by Clegg and Butryn (2012) above. Aggerholm and Larsen could show that the structure of experience in parkour involved a continuous striving to overcome challenges and to create new challenges to overcome. Striving to refine their acrobatic tricks into “clean movements” and achieving a sense of flow were also significant in the experience of parkour. But the sense of flow was highly subjective and not an end in itself:

But if flow, understood as a harmonic match between demands of the environment and one’s ability, was the primary aim and source of meaning in the self-organized practice of parkour, one would expect the practitioners to dwell in this state of fluent movement. They don’t. Rather, they tend to dwell in the process of breaking challenges and tolerate frustrations as they return to the productive experiences of altering the relation between bodily capabilities and spatial configurations (Aggerholm & Larsen, 2017, p. 82).

This empirical phenomenological study has expanded our understanding of the structure of the experience of parkour, adding the aspect of verticality in terms of experiential meaningfulness.

The examples given above were chosen with the purpose of showing how phenomenological empirical studies both aim to, and are able to, provide deeper insight into how people experience participation in movement activities and movement learning. The experience is subjective in kind and focuses on feelings and sensitive awareness, embodied self-knowledge and how these experiences often constitute the different meanings that participants construct and ascribe diverse movements, movement activities and movement skill learning. These insights can inform teaching and learning as valuable complements to the dominant, traditional and instrumental view of learners’ bodies in physical education and movement education in general, as Thorburn (2008) emphasized more than a decade ago.

I now go on to discuss phenomenography as an approach to study movement capability and movement skill learning, my aim being to show how phenomenography is particularly well suited to studying knowing and learning in educational contexts.

Phenomenography and movement skill learning

Many educators struggle with what Nuthall (2004, p. 295) calls “the heart of the problem that teachers face in the classroom,” which is nicely expressed by Marton (1995):

In order to make sense of how people handle problems, situations, the world, we have to understand the way in which they experience the problems, the situations, the world they are handling or acting in relation to (Marton, 1995, p. 174).

Exploring answers to this “heart of the problem” is a main aim of phenomenography. In the context of education, phenomenography aims at analyzing, understanding and describing learners’ qualitatively different ways of experiencing various aspects or phenomena of the world (Marton, 1981), for example what the learners are expected to know, so-called objects of learning, which is the focus in this paper. However, it should be mentioned that researchers, using a phenomenographic approach, also investigate other phenomena such as: how teachers experience the meaning of using a game-based approach (Jarrett & Light, 2019); how university teachers experience courses for educational development (Booth & Anderberg, 2005); how PE teachers experience “all-round movement capability” (Nyberg & Larsson, 2017) and how students experience cheating (Ashworth & Lucas, 2000).

Phenomenography emerged in the early 1970s from empirical studies of learning among university students in Sweden (Marton, 1994, p. 4424). The students were interviewed about their way of dealing with and understanding the content of a text. The findings showed that the students seemed to experience this phenomenon (the content of the text) in qualitatively different ways. The different ways of understanding the content were described as different ways in which people “experience, perceive, apprehend, understand or conceptualize the world around them” (Marton, 1994, p. 4425). This interest in how other people experience a phenomenon can be described as taking a second-order perspective, whereas a first-order perspective aims at describing the phenomenon itself (Marton, 1981). Of significant interest for phenomenographic researchers, therefore, are the *differences* in how people experience certain phenomena in their world and not, as is the case for phenomenology, the *essence* of certain phenomena in the world.

Like phenomenology, the ontological status of experienced phenomena is non-dualistic and experiential from a phenomenographic perspective. This is the reason why Marton (1995) argues for using the concept “experiencing” rather than for example conceiving or understanding. In this context, the meaning of experiencing can be described as a way of being aware of something “irrespective of focusing on conceptual or sense-related features” (Marton, 1994, p. 4426). We may experience sense-related phenomena, which are not easily verbalized, such as different nuances of color, different ways of acting or one’s own way of skiing, swimming or running. Experiencing sense-related phenomena is a specific way of knowing, embedded in one’s body, and is sometimes very hard to articulate (Carlgren et al., 2015). This kind of knowing is neither merely mental nor physical but an integration of both (Ryle, 1949/2009) and largely tacit (Polanyi, 1969). It concerns being sensitively aware

of certain aspects of something. At the same time, experiencing a phenomenon in a certain way is regarded as the meaning a person ascribes to the phenomenon (Sin, 2010) or, as Carlgren et al. (2015) suggest, a specific way of knowing.

The way a person experiences something is, for a phenomenographer, a relationship between the person and the world. This relationship also expresses an epistemological account, meaning that the way we experience a phenomenon, such as for example biomechanical forces, reading a poem, baking a cake, mountain biking or dancing is tantamount to a way we know these things. Such a non-dualistic and relational approach to knowing is in line with Polanyi (1969) and Ryle (1949/2009) theories of knowledge. People develop knowledge mainly through acting and participating in practices, not necessarily as separated subjects who first create perceptions of phenomena in the world and then act with these perceptions as a point of departure. Ryle (1949/2009, p. 22) describes knowing as “a disposition to act” which is reflected through actions and involves ways of being and seeing. This kind of knowing encompasses mental and physical processes as an integrated, inseparable whole.

Phenomenography as a research program includes, besides an approach to knowing, also an approach to learning and teaching. As mentioned above, the way you discern and experience different phenomena in the world is also the way you know them. Learning thus means a progressive change in the way you discern and experience a phenomenon (Pang, 2003, p. 153). Learning in this sense, can be likened to exploring a landscape. There are details and nuances (aspects) to be more and more aware of as well as connections and relations between these aspects (Carlgren et al., 2015). To gradually come to experience more of these aspects and their internal relationship means that you also start to know this new and unknown landscape in a more complex way than you did from the start.

Leading researchers in the area of phenomenography have developed a theory of learning based on the phenomenographic notion of knowledge, knowing and learning (Pang, 2003). It is labeled the variation theory of learning which also offers guidelines for teaching in terms of certain principles (Lo, 2012). A significant feature of variation theory is its focus on content in terms of an object of learning. The term “object of learning” is a significant concept in phenomenography and the variation theory. The object of learning is regarded as dynamic and can change during the learning process (Lo, 2012). At the outset of this process, learners bring with them previous experiences, thus encountering varying difficulties, which also affects the formation of the learning object (Carlgren, 2020).

Variation theory “highlights some necessary conditions for learning that are related to how the object of learning should be dealt with” (Lo, 2012, p. 17). That is, it highlights the aspects that seem necessary to experience in order to know something in as complex way as possible and how to enhance students’ possibilities to experience these aspects (Marton & Pang, 2006). A basic assumption is that some ways of experiencing, or knowing, are more complex and powerful than others, in relation to certain purposes (Runesson, 2005). According to variation theory, a necessary condition for discerning and experiencing something is to experience a variation in that dimension, which requires “a kind of temporal integration, a simultaneous awareness of what we are experiencing and what we have experienced in the past” (Marton & Tsui, 2004, p. 31). For example, being aware of your own way of walking may be difficult if everyone else walks in the same way and if you have always walked that way.

Aspects of an object of learning considered important for learners to experience are called critical aspects. To experience a critical aspect, the learner “must experience potential alternatives, that is, variation in a dimension corresponding to that aspect, against the background of invariance in other aspects of the same object of learning” (Marton & Pang, 2006, p. 193). For example, if we want students to experience the relationship between the ways they move their arms and the way they walk or run, they need to be exposed to varying relationships between these body parts. That could mean, for example, inviting students to move their arms in certain ways (variance) while they try to run in the same way (invariance).

Phenomenographic analysis

Phenomenography focuses on how other people experience phenomena, which means that a phenomenographic analysis is based on a second-order-perspective. If one aims to analyze and describe the reality per se, and not through other people’s experiences, this kind of description would be a first-order-perspective (Marton, 1981). As phenomenography aims to identify how phenomena are experienced differently, the analysis therefore entails searching for those differences.

The data most commonly used in phenomenographic studies are transcriptions from in-depth interviews. Interviewees are asked to talk relatively freely about a chosen phenomenon, which means the interviews are not focused on peoples’ explicit opinions of something. There are however other types of data that are possible to use. Some researchers have used children’s drawings (Sundler et al., 2017) and people’s actions (Björkholm, 2015). It is also possible to analyze people’s ways of moving, highly relevant of course in the context of movement education. The task for the researcher is to analyze the implicit meanings of multiple ways of expression regarding the phenomenon. Throughout the analytical process the researcher must try to “bracket” her/his own experience or conception of the phenomenon, although Ashworth and Lucas (2000) assert that it is not possible to create a completely objective analysis.

By comparing the differences between the implicit meanings people ascribe a certain phenomenon, qualitatively different ways of experiencing the phenomenon can be identified. These different ways of experiencing are described as qualitatively different categories of descriptions constituting a so-called outcome space. A phenomenographic analysis used in an educational context can identify different ways of knowing something to be known from the students’ point of view. The result of such an analysis contributes to a deeper understanding of the students’ pre-knowing as well as what is expected to be known (Carlgren et al., 2015), for teachers as well as students. Through a second analysis the researcher can identify the aspects, and their relationships, of the phenomena that are discerned and experienced by the learners. To understand in what different ways students experience what they are expected to know is one of the most significant aspects of teaching and learning (Dewey & Bentley, 1949/1989; Marton & Booth, 1997). Since phenomenography can contribute to a deeper insight into these issues it is an approach well-suited to investigating movement learning. However, as Marton (1994) and Biesta (2015) also assert, learning is always about learning *something*. Investigating *what* there is to learn is therefore a fruitful starting point when studying learning. This was consequently a main question when I, together with colleagues, started to investigate what movement capability could mean, mainly through a phenomenographic approach, as described below.

Exploring the meaning of movement capability

In Sweden, one aim with the subject physical education is to develop students' all-round movement capabilities. It is however not clear what students are supposed to learn and consequently what teachers are supposed to teach regarding movement capability (Larsson & Karlefors, 2015; Redelius et al., 2015). Phenomenography was considered helpful in several research projects of which the aim was to investigate the meaning of movement capability, or in other words, *what* there is to learn regarding this capability (Nyberg & Larsson, 2014). A basic assumption was that movement capability, or rather movement capabilities, are capabilities developed by the movers in order to grasp different ways of moving. Thus, capabilities are not regarded as the equivalent of sport skills, imbued with certain standards of excellence. One reason for adopting a phenomenographic approach to researching the concept of movement capability was to challenge prevailing dualistic and narrow views on ability in PE (Evans & Penney, 2008; Evans, 2004; Larsson & Quennerstedt, 2012; Nyberg et al., 2020). It was considered necessary to reinterpret movement capability as possible to develop, comprising experiential as well as spatial aspects (Farnell, 2001; Nyberg & Carlgren, 2015), theoretical as well as practical knowledge (Ryle, 1949/2009; Polanyi, 1969) and as a capability with alternative standards of excellence (Larsson & Nyberg, 2016; Nyberg et al., 2020). The findings from these studies show a range of different ways of knowing that skilled movers have developed in order to grasp how to move the way they aim at. The findings also show ways of knowing that seem beneficial for novice learners to develop. These ways of knowing, considered as dimensions of movement capability, are for example:

- discerning one's own and others' way of moving
- discerning ways of using space
- navigating one's embodied awareness
- grasping somatic causality (causes and consequences of one's way of moving)
- discerning and regulating one's velocity
- describing and expressing abstract concepts in bodily ways
- solving acute movement problems

(Carlgren & Nyberg, 2015; Nyberg & Carlgren, 2015; Nyberg, 2015).

These different ways of knowing are to be seen as comprising theoretical and practical aspects of knowledge as an indivisible whole, which is in line with a phenomenographic perspective on knowledge and knowing. If movement learning could provide possibilities of developing these kinds of knowings, the educational aim could be legitimized in terms of knowledge and knowing.

I have in this section described how phenomenography has provided the possibility to explore what movement capability can mean. The following section provides examples of how phenomenography can be used to analyze qualitatively different ways of knowing in moving.

Different ways of knowing dancing

Here I present a concrete example from one empirical study to show how a phenomenographic analysis of learners' different ways of moving can identify and verbalize qualitatively different ways of knowing (or experiencing) dancing. Additionally,

this kind of analysis provides an illustration of what aspects of the object of learning seem to be critical and thus beneficial for learners to be aware of. I then suggest how the variation theory of learning can contribute to planning for teaching and learning to help learners learn and develop their knowing in dancing.

The following describes a phenomenographic analysis of 11-year old students performing a dance task (Carlgren & Nyberg, 2015). Their teacher divided the class into three groups with seven to eight students in each. Each group was assigned a theme such as sand, rock and water, together with a couple of sentences related to each theme.¹ The students' task was to transform each word into a way of moving and shape a dance sequence based on the sentences. This task included two challenges of which one was to express or mediate the meaning of the words. The other challenge was to express or mediate the two sentences as a whole, through combining the movements. A colleague and I conducted a phenomenographic analysis based on video films showing the students' solutions to their task. We analyzed their ways of moving to find out the different ways of knowing dance that could be experienced in each group as a whole.

The first part of the analysis was to observe carefully the students' different ways of moving when expressing each word in each group. How could the differences between the groups' ways of moving be understood as different ways of experiencing how to express the words through movements? The next part of the analysis concerned the way these student groups combined their movements into dance sequences, thus expressing or mediating the meaning of the sentences. Through the first analysis, we interpreted three different ways of experiencing the task of expressing words through ways of moving. We described these categories as *different ways of experiencing the relation between words and movement* as:

(1) Occasional

The relationship between words and movements is arbitrary. For example, expressing "sand" by sitting with one's arms around one's legs or jumping backwards when expressing "rock;"

(2) Illustrating

The relationship to the word can be described as illustrating an experienced meaning of the word. For example, moving closer to each other when expressing "close" or stretching one's arms upward when expressing "up;"

(3) Being

The way of moving can be described as being the word. For example, when expressing "rock" the students take a solid position and tense their muscles.

These three categories show different experienced meanings of how to express words and concepts through movements. In other words, how the students understood the task of expressing concepts, feelings and senses through ways of moving. In the first category, the way of moving does not seem to relate to any meaning of the word or concept. The second category, "illustrating," shows some sort of relation to the meaning of the words but without expressing the "inner" meaning as is the case in the third category; "being." For example, the word "close" can be expressed (illustrated) through moving closer to each other without expressing what "being close" could mean in terms of feeling or sensing. In contrast, with

“being,” the word expresses for example a feeling of being a rock; hard and heavy. Before I discuss how these categories can provide help for planning teaching in order to help students develop their movement capability regarding this aspect of dancing, I present the second part of the analysis.

In this part of the phenomenographic analysis, we focused on how the students seemed to experience the task of combining the movements into dance sequences, thus expressing or mediating the meaning of the sentences. We searched for general differences regarding the groups’ ways of moving and constructed three categories showing ‘dancing the sentences as:

(4) A row of separate movements

The students perform one movement at a time and a planned transition to the following movement cannot be distinguished. Sometimes the students have to transport themselves or change position in order to initiate the next movement.

(5) A stream of movements

The movements flow into each other. The transition between the movements is harmonious and seems to be planned.

(6) A phrase with a meaning

The movements flow into each other. The transition between the movements is harmonious and seems to be planned while at the same time constituting a whole, seemingly expressing the experienced meaning of the sentences.

The categories provide descriptions of differences that highlight what it can mean for the students to create a dance of sentences. In the first category, the movements are put together as separate delimited parts, in the next category the movements are composed into a flow. In the third, the assembled whole forms more than the parts together. For example, the water group’s dance gives the impression of undulating waves in the sea.

According to the phenomenographic approach, both experiencing the task of expressing words and expressing the sentences as a whole through ways of moving are also regarded as qualitatively different ways of knowing these tasks. The meaning of the students’ knowing becomes visible in a way that enhances verbalizing otherwise tacit aspects, namely the nuances and aspects of what it can mean to know the dancing tasks. Different ways of knowing dancing could for example be whether the movements express one meaning of a word: how the movements are performed (stiffly, softly, firmly etc); how they are combined; how consistent and harmonious the students’ movements are and whether the whole dance sequence represents an experienced meaning of the sentence.

From this phenomenographic analysis, we know that within this group of students there were greatly varying ways of knowing the dancing tasks. We also created ways to articulate the students’ varying ways of knowing. Movement education involves (due to the extent of tacit aspect of knowing) verbal difficulties; even if a person knows what there is to know, it does not necessarily entail the ability to articulate it (Lo, 2012; Ryle, 1949/2009; Polanyi, 1969). Hence, movement learning can be facilitated through developing a language for articulating different ways of knowing in the context of movement education. Knowing

moving (for example expressing words in dancing) *as* something, (for example as illustrating or being the word) can serve as metaphorical articulations which in turn also could be seen as creating a certain meaning of a movement.

Besides an insight into learners' understanding of a learning task, phenomenography also provides, through the variation theory of learning, principles for teaching as exemplified in the next section. But first it should be mentioned that what should be considered more complex and thus worth striving for is not self-evident. A question to be answered is therefore which categories represent the most complex ways of knowing? One answer to this question is that it depends on the purpose of the task as well as the purpose of the movement education in different contexts, which could of course be a negotiable issue. In this case, due to how we understood the task, we stipulated that category three and six might serve as a direction for the development of knowing in dance. The reason for regarding these categories as more complex than the others, was that the way the water-group performed their dance gave an impression of quite advanced knowing in dance. Their movements were expressing clear relations to some sort of meaning in terms of being the word. The movements were also combined together with a harmonic flow as waves in the sea. In this sense, category three and six can provide clues to what the teacher might expose to the learners in order to discern and experience aspects regarded as critical. These identified critical aspects constitute a starting point when planning teaching using the variation theory of learning.

Variation theory of learning – Helping learners to know dancing in a more complex way

The variation theory of learning was, as mentioned before, developed out of phenomenography. The theory can be used to help learners experience those aspects of knowing in dance that are regarded as critical in order to know dancing in a more complex way. If the teacher considers it important for the students to be capable of expressing the meaning of a concept or a word by *being* the concept or word, they must experience for example the difference between illustrating and being. The teacher can, in a systematic way, provide opportunities for the students to discern and experience, with all their senses, what it means to *be* a word and foreground the difference from *illustrating* the word. This could be done in different ways, through examples of illustrating and being respectively and discussing and reflecting on what differs between them. It could also be done by giving the students tasks and inviting them to explore different ways of expressing a word or a concept. The students' embodied explorations and solutions of their tasks could then be foregrounded by the teacher in relation to possible meanings of *illustrating* and *being* the word.

In a previous study (Nyberg & Carlgren, 2015), I have used the notion of *somatic contrasting* to describe how movement skill learning could benefit from the principle of variation. The notion of somatic contrasting through embodied exploration has been a core principle in recent research projects investigating movement skill learning (Barker et al., 2021; Nyberg, 2018; Nyberg et al., 2020, 2021). In these studies, based on somatic contrasting through embodied exploration, my colleagues and I investigated what it means to learn and know: discerning one's own and others' ways of running, juggling, unicycling and dancing. The overall research question has been "what does it mean for learners to learn and

know what is expected to know?” These questions are central to phenomenography and possible answers are solutions to “the heart of the problem that teachers face in the classroom” (Nuthall, 2004, p. 295).

Discussion and conclusion

I started this paper by stressing previous as well as contemporary calls for the need for perspectives on movement capability and movement learning that take into account the intrinsic, meaningful value of moving in terms of the experience of the mover as a learner and a knower. I then described two perspectives that fulfill these requirements: phenomenology and phenomenography. As a starting point a brief review of phenomenology was provided before I described why phenomenography, a qualitative research method with phenomenological ties, is so well-suited to studying movement skill learning.

The phenomenographic approach to movement learning can be summarized by noting that it invites us to regard the knowing involved in different ways of moving as capabilities, comprising mental and physical skills as an integrated whole. Additionally, phenomenography provides tools to verbalize movement capabilities, which are not based on the predetermined established movements often associated with standards of excellence. Instead, different ways of knowing a movement are to be seen as complementary rather than differentiating abilities. Being aware of, as a teacher as well as a learner, different ways of knowing what is expected to be known, can contribute to a comprehensive picture of this phenomenon, serving also as an eye-opener with regard to the meaning of an object of learning. Lastly, phenomenography, in its theoretical development (the variation theory of learning) also contributes to principles for teaching and learning movement capability.

To return to how phenomenography differs from phenomenology I would like to underscore one main difference, as I conceive it, by quoting two questions that characterize phenomenology and phenomenography respectively. When Jones et al. (2016) stress the importance of phenomenological approaches within research on PE and put forward the question: “What does it mean to be a learner” (p. 891), it seems to me that this could be close to a central question relevant to most phenomenological research on movement learning. A central question for phenomenographic oriented research is instead: “what does it mean for learners to learn and know what is expected to be known?” Both approaches share an interest in acknowledging the perspective of the learner and, in an educational context, both questions are relevant and important if students are to be provided opportunities to learn about themselves and develop their movement capabilities through exploring, expressing, inventing and creating in the context of movement education.

Notes

1. The sentences were formulated as: “Sand is made up of very small pieces of rocks. Sand is moved by wind and water to make beaches;” “Rocks are found near the oceans of the earth. Rocks are hard, solid material that water can change into sand;” “Water is a liquid that forms seas. Waves in sea water can be strong enough to change rocks into sand.”

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