What is complex in complex movement –

A study of Swedish curriculum concepts of moving

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Introduction

In 2011, the Swedish National Agency for Education introduced a new national curriculum. Its predecessor, the curriculum issued in 1994, had been criticized for being vague and unhelpful for practitioners. There was consequently an expectation that the 2011 syllabus’ more prescriptive form would provide specific, practical guidance for teachers in the classroom. This expectation from politicians as well as teachers was only partially met. A number of educators were disappointed with a ‘slim’ document that outlined a number of objectives but prescribed few strategies for achieving these objectives. In the context of physical education (PE), a new term proved especially confounding: complex movements. While physical educators had always attempted to teach students how to move, they were now required to help students move in “complex” ways and also assess this “complexity”. Specifically, students were (and still are) supposed to learn to “participate in games and sports involving complex movement in different settings, and vary and adapt their movements well to activities and context” (Lgr 11, Skolverket 2011). In the subsequent years, this addition has caused Swedish PE teachers a great deal of anxiety. Teachers have discussed the issue in a variety of forums, with questions of definition, implementation and assessment in the foreground.

Against this background, the broad purpose of this investigation is to discern what the phrase ‘complex movement’ entails in the Swedish curriculum. Using a discourse analytic approach, the specific aim is to identify discourse(s) within which complex movement is a part, and by doing so, provide some insight into the meaning(s) that can be produced. This task, we believe, can improve physical educators’ understanding of movement in general, and thus lead to a more reflective approach to movement education. Our basic theoretical starting point is that all texts (words, phrases, actions, for example) acquire their meaning from the contexts in which they occur. This makes a central part of the analytic task identifying the terms and phrases that surround the phrase complex movement in the
curriculum, and ‘reading between the lines’ to see the kinds of assumptions that remain implicit in the document.

The paper begins with a review of movement education literature in which we identify the ways that the idea of complexity is connected to movement. We then outline our methodological approach, summarizing principles of discourse analytic thinking that we have made use of in this investigation of authoritative text documents directed towards teachers (like the national curriculum documents and the syllabus for the subject physical education and health). Our results follow. Here, we present and discuss the curriculum and point out the key ideas that potentially structure how readers make sense of complex movement. We finish by relating these ideas to the movement education literature and considering some implications for practice.

Background

Movement and movement learning has garnered a great deal of attention from PE scholars (for overviews see Barker, Bergentoft, & Nyberg, 2017; Larsson & Quennerstedt, 2012). In this section, we investigate how some of these scholars have used the term ‘complex’ in relation to movement. We identify four mutually supporting but appreciably different inferences that scholars have attached to the term, offering explanations and examples for each one. We then briefly examine some of the wider assumptions that underpin this usage. A preliminary point to note is that complex movement is not a scientific concept for which one can find a definition or description. Nowhere did we find a statement saying ‘a complex movement is one which…’. At the same time, ‘complex’ is used relatively frequently in the movement learning literature and it appears to be consensus around the ways that it can be employed.

A common connotation of complex is advanced. Very simply, complex is used to distinguish between fundamental or basic ways of moving that are done in elementary (or primary) school and ways of moving that are superior, higher or more sophisticated that are done later in education (Delaš, Miletić, & Miletić, 2008; Rukavina & Jeansonne, 2009). Complex in this sense is connected to notions of progression and development and is used to mean more “mature” (Miller, Vine, & Larkin, 2007, p. 63). Alone, this aspect of meaning tells us little about what complex movements might look like in practice. Combined with the following aspects however, a more detailed picture begins to emerge.

Scholars frequently use complex to denote moving, which takes place in specific contexts (Chow et al., 2007). In contrast to general or fundamental ways of moving, complex movements are done in certain situations that place certain demands on the mover. An overhand throw for example, might be done anywhere – or at least in a variety of different places – whereas a javelin throw with its specific grip and run up is done as part of athletics. The underpinning logic is that complexity is introduced when movers perform in situations that make particular demands on the mover. A corollary
is that complexity is possible only when a context allows for different movements but demands one. From this perspective, a situation’s potential for complexity can be removed by either not allowing different movements (as in a drill) or by not demanding any specific movement response (as in some forms of creative dance, for example).

Complex movements need to be performed in specific contexts but these contexts should also be dynamic and changing. They are almost universally equated with games and sports contexts (Drost & Todorovich, 2013; Overdorf & Coker, 2013). Practically all the examples of complex ways of moving given in the literature involve games and sport along with references to decision-making and tactical understanding (Avery & Retting, 2015; Chow et al., 2007). The idea that learning fundamental skills will prepare individuals to participate in games and sports is widespread, prompting Okely and Wright (cited in Larsson & Quennerstedt, 2013, p. 293) to comment that fundamental motor skills should be understood as fundamental sports skills. Here, it is useful to point out that games/sport and conceptions of fundamental/complex movement (and current understandings of ability for that matter – see Evans and Penney, 2008) can be seen as part of the same discourse. In other words, they make sense in light of one another. This is a key idea and one to which we shall return in the second part of the paper.

Finally, scholars use the term complex to signal that reflection or thinking is connected to moving. Rukavina and Jeansonne (2009) for example, suggest that students should have opportunities to apply complex concepts when moving. Chow and colleagues (2007) propose that “learning would be optimized if students were engaged in complex and meaningful problem-based activities” (p. 252). These claims are part of a wider logic about student centeredness and the possibilities students have for influencing their learning. In this logic, movement done in complex environments, which encourage students to ‘think for themselves’, is seen as positive, and in this sense complex.

In short, complex movements are generally understood as mature ways of moving that are grounded in the specific practices of games and sport that involve thinking. In many respects, complex movements makes perfect sense in the context of specific types of PE. Indeed, several scholars have claimed that other understandings of movement might require quite different conceptions of PE (Larsson & Quennerstedt, 2012; Nyberg & Larsson, 2014). At this point however, we are interested in the way the Swedish curriculum makes sense the notion of complex movement. In the next section, we outline a methodological approach for investigating this issue.

**Methodology**

A well used approach to explore possible understandings and alternative meaning is discourse analysis. It is often related to public education and opinion forming, today often conducted under other
labels (Howarth, 2000) but still effective in investigating collectively held meanings and collective practices (Taylor, 2013).

**Discourse theory as a base for discourse analysis?**

Jørgensen and Philips define discourse as “…the general idea that language is structured according to different patterns that people’s utterances follow when they take part in different domains of social life…” (2002, p. 1). Discourses accordingly enable us to identify and engage with the objects we encounter but, for instance experiences, feelings, the body, the material world and people’s actions are by some scholars considered non-discursive (Howarth, 2000). Drawing on Foucault (1977), discourses are also means for different forces to advance their interests.

Discourse theory then, assumes that all objects, actions and events are meaningful, and that meaning is a product of historically specific systems of rules trying to provide interpretations of practices and showing their meaning (Howarth, 2000). Being the major influence on the development of discourse theory, structuralists regard meaning as a product of, and depending on, the relations between different elements in a system of signs. Jørgensen and Philips (2002) draw on Saussare as they argue that the meaning of individual signs gains its specific value from being different from other signs.

**Discourse analysis - a method of interpreting text**

Discourse analysis is not a single, easy to recognize, method of interpreting or analyzing data, but needs to be built up from the purpose of the research and the research question(s) (Howarth, 2000). It is necessary to draw on earlier productions of meaning to be understood, but in discourse analysis some elements should also be put together in a new way, which leads to a change in the discursive structures. For example Fairclough’s key concepts for analyzing these structures are *intertextuality*, which draw on earlier communication, is reproduced or changed and *interdiscursivity*, a form of intertextuality, where different discourses are mixed (Jørgensen & Philips, 2002, p.73). Power relations are here the main factor that determines the access of different actors to different discourses and limit the possibilities for change. It is possible to look at the way in which political forces and social actors construct meanings within incomplete and undecidable social structures (Howarth, 2000).

To fully understand something one need to know its situated use, which means that it refers to time place and people (Wetherell, Taylor & Yates, 2001). Discourses that are representing reality in one particular way rather than in another possible way constitute subjects and objects in certain ways. This creates boundaries between what can be considered as true and false, and makes certain types of action relevant and others unthinkable. It is in this sense that discourse is constitutive of the social. The principle is that discursive practices are in a dialectical relationship with other social practices: discourse is socially embedded (Jørgensen & Philips, 2002). In this paper an assumption is that the
writings in the curriculum has their roots in the ongoing discourses in the field of physical education, sports or health and therefore these discourses can be identified and traced.

**What is the task of the discourse analytical researcher?**

Since discourse theory is concerned with interpreting and understanding socially produced meanings, one of the major goals is to delineate the historically specific rules that structure the production of meanings in historical contexts (Jørgensen & Philips, 2002). Social phenomena are never finished or complete in discourse theory, and meaning can never (except temporarily) be fixed (Jørgensen & Philips, 2002). It is also *indexical* as it depends on and changes with context (Taylor, 2013). This leads to constant social struggles about definitions of society and identity. The task then is to plot the course of these struggles to fix meaning at all levels of the social (Jørgensen & Philips, 2002). Analysis of discursive practice focuses on how authors of texts draw on already existing discourses to create a text, and on how receivers of texts also apply available discourses and genres in the consumption and interpretation of the texts (Howarth, 2000). If wanting to identify discourses within official documents, these documents will only acquire their status as a result of their use within an administrative system, which therefore has to be established by the researcher (Wetherell & Taylor & Yates, 2001). The system established here would of course be the Swedish compulsory school system in all.

**Discourse analysis as qualified research**

Discourse analysis also needs to meet certain criteria to qualify as research. In discourse analysis, knowledge is regarded as situated, contingent with no stable truth. Reality is influenced by anyone who tries to represent it. This all challenges the traditional positivist criteria for evaluation. Reliability and replicability is in positivist tradition stemming from a view of reality as a “single external reality knowable through language” (Seale, 1999, p. 41). The same goes for validity, which is “truth known through language referring to a stable social reality” (p. 34). The claims are that the project has relevance or connection between the topic and well-known social issue and lastly, that the project is useful, meaning that new data is provided or that of transferability meaning that it can be relevant to new situations. This comes close to generalization. Ultimately, peer researchers handle the justification of research. It can be emotional and with faults but in the end it seems to work. (Wetherell, Taylor & Yates, 2001)

**Analytical Strategy**

As analytical strategy to identify discourses in the data, some sort of coding will most likely occur, as it is the link between collecting data and developing a theory to explain these data. With coding, what is happening can be defined and it is possible to begin to grapple with what it means. Different strategies can be used to understand the material and to identify analytical focus points. The overall focus and the research questions have already been determined but strategies could help to refine them.
even further. One strategy is to compare a text with other texts, based on the structuralist idea that a statement gains its meaning by being different from something. Another method is called substitution and involves exchanging a word with a different word. By doing so one can identify how the meaning of the examined text changes. If something significant is found but the relation to the text is hidden, it can be over-exaggerated to see under what conditions the feature make sense. Further more, multivocality can build on the results of the exaggeration of detail and is based on the discourse analytical premise concerning intertextuality (Joergensen & Philips, 2002).

**The process of analysis**

Discourse analysis is accordingly relatively open-ended and circular. It can begin with any one of the strategies above or other, switching back and forth and it is of course not necessary to use them all. Patterns will be looked for in the data but what is significant might not be obvious at first. Through so called **initial open coding** it is possible to start to investigate, compare, categorize data and develop preliminary concepts (Kuckartz, 2013). The work involves going over data again and again as patterns can be identified in the process of analysis (Wetherell, Taylor & Yates, 2001). The result of the first step of the analysis should be a list of concepts, which can be summarized into categories in the next step. A category is an independent classification of concepts that have a relatively high degree of complexity but appear to refer to similar phenomena. To define a category, indicators must be determined. Selective coding follows then and it is the process of choosing a core category, systematically relating all other categories to that core category, validating these connections, and looking at categories that require further refining and development. The analytical work is then arranged in such ways that key categories are extracted throughout the analysis, and the theory is constructed around them possibly with one of the axial categories serving as the decisive key category (Kuckartz, 2013). In this paper categories are initially created from potential discourses identified in literature in the field. Then the data is compared and related to these categories and subsequently identifying discourses in the data material.

**Data material selection**

Used as data material will be available documents for teachers related to the national curriculum (LGR11) earlier mentioned, and published by the Swedish School authorities ¹ that can be retrieved from their homepage. In this sense these texts, support materials and instructive film clips can be seen as authoritative documents teachers in some senses need to relate to when they are teaching, assessing and grading students (cf. Quennerstedt, 2008). This would be the natural and expected source of information for any steering document for teachers in the Swedish school system. Documents produced elsewhere will not be considered official documents and therefore without value for this

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¹ Skolverket is the name in Swedish
research. An overall search on “PE”^2 on the official homepage for teachers^3, gave 882 hits. Out of these, 242 were hits on curriculum, subjects and courses. 26 were publications. Most hits were on other school forms such as Special school, Saami school,^4 High school etc. Some were belonging to other subjects and some with no relevance for PE. An overall search on “complex movement”^5 gave 237 hits of which 107 were related to curriculum, subjects and course plans, and 5 were publications. None contributed to the selection apart from what will be listed under “Documents examined” below.

After being in contact with the Swedish National Agency for Education the following documents were established as possible sources for data:

**Documents examined**

Consequently, the documents found, on the Swedish national school authorities official homepage,^6 containing material dealing with the writings under consideration and which are used as data in this study are:

- The curriculum and the course plan in PE for primary school – LGR 11 (A)
- The commentaries to the course plan in PE (B) – Supports the teachers by providing a broader and deepened understanding for what created the formulations in the curriculum based on science.
- The basis for discussion in PE (C) – Material developed for local subject meetings^7
- The film about PE (D) – Talks about the subject in general terms
- The assessment support A written part (E1) – Is supposed to give the teacher help in assessing the students together with the film below
  A film part (E2)^8- reflecting the written part

**Results**

The aim was to identify the discourse(s) of which complex movement is a part, to provide some insight into the meaning(s) that can be produced. The search for a definition gave nothing even though the assessment support, refers to the commentaries where ”a guide to how certain concepts, for example … complex movement should be interpreted” (E1). The analysis is at this point preliminary and discourses have not yet been identified according to the purpose. However, the preliminary analysis shows that:

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^2 The name of the subject in Swedish is ”Idrott och Hälsa”
^3 skolverket.se
^4 The saami school is a specially developed school for the saami people of Sweden, which has its own curriculum
^5 In Swedish was searched for ”komplexa rörelser”
^6 www.skolverket.se
^7 Nothing was extracted from this document
^8 https://www.youtube.com/watch?v=rIJ-GldpwL8&index=7&list=PLDGFMl2PX9LbcSU_L5x_U0ECoXsszS9Ek
Complex movement is for everyone

In the grading criteria for year 7-9, for the lowest passing grade -E, we read: “Pupils can participate in games and sports involving complex movements in different settings, and vary and adapt their movements to some extent to activities and context” (A), and the assessment support material exemplifies an obstacle course where the instructions are as follows; “you are to move in a movement course with stations that demand complex movements. The course gives you opportunities to choose difficulty level” (E1) This means that all students at this level, and thus, all students at one time, are to be involved in complex movement in games and sports in order to pass. Furthermore we find that: “The ambition is that all students should be given the opportunity to take part in different movement activities according to his/her individual ability. By consequently offering a wide range of activities such as games, gymnastics, sports, dance and movement to music this position is strengthened” (B, p. 6, 8). From this we can understand that, since all students should be able to participate according to his/her ability and at the same time we know that all students should take part in complex movements, then the range of what complex movement is, must be broad.

What movements are complex

As complex movement is mentioned first in year 7-9, movements required prior to that, could be seen as non-complex. Which means that “running, jumping and climbing and these in combinations using equipment, games and dance and movement to music, both indoor and outdoor”, together with swimming (A), is not complex. Later, still non-complex, sports are added “with different degrees of confidence and precision, even in group” (B). Dance and movement to music is excluded: “There are currently two parts of the knowledge requirements that deals with movement, one that deals with partaking in play, games and sports that contains different degree of complex movement. And one part that deals with the ability to move to music in dances and in work out programs” (E1, p. 7). Lastly, to illustrate the wide range of what can be considered complex, “high jump using certain techniques is an example of complex movement” (B) and walking backwards, on an elevated thin bar 1 meter above the ground is as well. But so is jogging a zig zag course (E2, 2.40).

Which, leads us to the next question:

Is complex movement advanced

In the commentaries we read that complex movements should lead to all-round movement abilities as opposed to specialized or in-depth movement abilities (B), but at the same time it mentions complex movement as the opposite on a scale of simple and fundamental and sports seem to belong on the complex movement “side” as opposed to simple movement games:

“The progression consist of that the older the students get the more complex forms of the combined movements that can be included in the teaching” (B).
“The progression goes from the motor fundamentals to more complex movements, from simple movement games to more complex games, sports and other physical activities (B).

Understanding complex movement

One can see in the talk about the subject’s purpose and knowledge content, that the concept complex movement is not clear (D, 10.44-11.04). This could be the reason why, in many places, the knowledge factor is pushed forward (B). “The subject’s knowledge assignment is emphasized. With that is meant that the school should not try to make the students more physically active in the first place, but above all give them knowledge of how to best develop the body ability” (B). And if body ability is synonymous with movement ability, this means “the students’ ability to develop joy of movement, coordination, condition, strength, flexibility, mental capacity and motivation” (B). We learn that the health aspect is central and connected to complex movement (D). Furthermore, about what knowledge is talked about, the assessment support states that “… movement deals with developing the ability to move versatile in different physical contexts… Learning aims to enable participation in movement” (E1). Lastly complex movement is not knowledge to receive but a process (B).

In relation to the literature

The specific aim was to identify the discourse(s) of which complex movement is a part, and by doing so, provide some insight into the meaning(s) that can be produced by the phrase. In the background we found four wider assumptions of the concept.

The first was that complex is used together with movement as a connotation for *advanced* in much of movement literature. In the steering documents we can see the same use of the concept in many places but also quite the opposite as complex movement is also developing broad, all-round movement abilities and should be adapted to the level of all students.

The second common usage was in *specific* contexts and in contrast to general or fundamental ways of moving. It is harder to find support for this usage in the steering documents as one refer to that complex movement should not be depending on context.

Thirdly, the usage was in specific context but also *dynamic and changing*. Here it is easier to see the connection to the terms games and sports, which are frequently used in the steering documents as examples of complex movement.

The last example of usage presented referred to the use of *knowledge and understanding* together with moving that was making it complex. Also here we can find support in the steering documents as it for instance, emphasize thinking and knowledge inquiry in relation to complex movement.
The analysis shows that it is possible to identify, and possibly trace discourses to understand the concept of complex movement in the steering documents.

Final remarks

The specific aim was to identify the discourse(s) of which complex movement is a part, and by doing so, provide some insight into the meaning(s) that can be produced. The results indicate that there is no clear definition or meaning of complex movement in the steering documents and only by putting it in relation to other concepts and “reading between the lines” the teacher can try to understand what is meant. But whether the “correct” interpretation is made or not there is no answer because in the end most data on complex movement can have multiple and/or often contradicting meaning.

There can be several possible reasons why complex movement now appears in the curriculum. One reason could be that the concept aligns with other subjects originating from the common European framework for language (GERS) (B). Another reason could be that, as the school agency has looked at common standards in Europe for language, this might also be the case in physical activity.

If the span over which you can interpret complex movement is so wide then it will lose its status as “value word” (B) and as there is “nothing that throws old theories and ways of thinking over board” (3.44-3.53), one can wonder, was it worth the confusion?

References


Taylor, S. (2013). What is Discourse Analysis? Bloomsbury A


Web links referred to by the Swedish National Agency for Education

The curriculum and the course plan in PE for primary school: www.skolverket.se/laroplaner-amnen-och-kurser/grundskoleutbildning/grundskola/idrott-och-halsa

Commentaries to the course plan in PE: https://www.skolverket.se/publikationer?id=2589

Basis for discussion in PE: https://www.skolverket.se/publikationer?id=2536

The film about PE: https://www.youtube.com/watch?v=oOKLvVUhVnw&feature=youtu.be

The publication database: https://www.skolverket.se/om-skolverket/publikationer

Assessment support: https://bp.skolverket.se/web/bedomningsstod/start