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**THE CHANGING VALUE OF VIGOROUS ACTIVITY AND THE
PARADOX OF UTILISING EXERCISE AS PUNISHMENT IN
PHYSICAL EDUCATION**

Erik Aasland
Oslo and Akershus University of Applied Sciences
erik.aasland@hioa.no

Kristin Walseth
Oslo and Akershus University of Applied Sciences

Gunn Engelsrud
Norwegian School of Sport Sciences

Abstract

Background: Previous research on physical education (PE) teaching practice indicates that an exercise physiology discourse has assumed a dominant position within the field. Research shows that PE teachers are likely to emphasise physical fitness training in their teaching, and PE teachers seem to appreciate pupils who show high levels of physical exertion.

Purposes: Our aim is to examine how vigorous activity/exercise is represented in teaching practice generally, and in PE classes in particular. We will also examine teaching as a discursive practice, and thereby contribute to a critical perspective on PE pedagogy.

Research design: This study was conducted in four upper secondary schools in Oslo, Norway. Data material was produced through fieldwork, during which we observed 92 PE lessons. Additionally, we conducted qualitative interviews with the eight teachers who participated in the study. Our methodological framework was discourse analysis.

Findings: Our material shows that vigorous activity plays a complex role in PE class: it can be beneficial, but it can also be punitive. The PE teachers we observed drew on an exercise physiology discourse to portray vigorous activity/exercise as beneficial and valuable to the promotion of pupils' physical fitness and health. However, the teachers also drew on a military discourse when assigning vigorous activity to rebuke a disobedient pupil. The teachers also introduced vigorous activity in the form of additional exercise 'punishment', which they assigned to losers in competitive activities. In these instances, the teachers drew on exercise physiology and sports discourses. Thus, we identified how vigorous activity changed value according to context, and discuss how teachers' use of vigorous activity as punishment can seem paradoxical in a PE setting.

Conclusion and recommendation:

Our study indicates that, rather than adhering to modern educational practices, PE is rooted in ideas and practices derived from military, sports, and exercise physiology discourses. PE teachers inculcated with these discourses have limited ability to discern the paradox of assigning vigorous exercise to their pupils as both a high-value activity and a punishment. PE Teacher Education should therefore problematise how teaching practice is influenced by these discourses, and facilitate discussions on how such discourses constitute PE.

Keywords: Physical education, vigorous activity, changing values, punishment, discourse analyses

The changing value of vigorous activity and the paradox of utilising exercise as punishment in physical education

Introduction

The school bell tolls. Pupils enter the sports hall boisterously, and the teacher rounds them up in one of the corners. The pupils stop talking, and the male teacher makes an announcement: 'Today's topic is play, fitness and gymnastics, and the purpose of the lesson is to achieve vigorous activity'. The teacher initiates the lesson by addressing the importance of participating actively in the PE lesson and exercising with high intensity. However, later in that lesson, the teacher splits the pupils into four teams and explains in detail how to perform a specific relay race. One rule is that the losing team is required to do 10 push-ups. One of the pupils, a girl, comments, 'It's strange that something you say is good for us is actually a punishment.'

The scene described in this passage was observed in a physical education (PE) lesson in the course of fieldwork at an upper secondary school in Oslo. The teacher lauded vigorous activity as something beneficial and valuable to the students. However, as his pupil pointed out, in the course of his description of the lesson, vigorous activity seemed to shift in value from positive to negative: Initially depicted as something desirable, moments later it became a punishment for the 'losers', which should be avoided if at all possible. Our research question for this article is thus:

How does the value of vigorous activity appear to change in PE teaching practice?

In our study, we consider PE teaching practice to be discursive. Teachers implement a number of different discourses in their practice. As the description above shows, the PE teacher is pivotal in the constitution of teaching practice. Hence, we pay particular attention to how PE teachers draw on discourses when they actually constitute teaching practice.

The article is structured in the following order: We first introduce the Norwegian PE context and then present our methodological framework. Thereafter, we display our findings, which show how the value of vigorous activity appears to change in PE teaching practice. Finally, in the discussion, we elaborate further on why and how the value assigned to vigorous activity appears to change and the paradox involved in utilizing vigorous activity/exercise as punishment in PE.

The Norwegian context of the study

In Norway, PE (Kroppsøving) has been a compulsory subject since 1936. It is mandatory throughout 13 years of school. At the upper secondary level, the time allocated to PE is two hours per week (2 x 45 minutes, usually organised as one teaching lesson per week). The PE curriculum in upper secondary level covers a broad content area (Leirhaug and MacPhail 2015). The primary focus is on Sports activities, Outdoor activities and Exercise/lifestyle (Leirhaug 2015). The curriculum also includes knowledge goals in these three areas. Upper secondary school pupils are assessed and receive a grade for overall achievement based on their competence (Udir 2012; Walseth 2015), and the competence goals *are not* formulated in a way that indicates that teachers should emphasise vigorous activity, or assess pupils' physical fitness (Walseth 2015).

The historical context of Norwegian PE

In a Foucault-inspired analysis of historical material from the period of 1848 to 1925, Augestad (2003), found that PE in Norway is rooted in military tradition. Its armoury of disciplinary techniques was well suited to the pedagogical regime of that era, promoting the character traits and manners regarded as important goals of education in general

(Augestad 2003). Another major influence on Norwegian and Swedish PE during that era was Per Henrik Ling's Gymnastics, a system of training methods that allegedly developed self-discipline in pupils, as well as good posture.

Although the role of military discourse in PE gradually diminished in subsequent years, some of the ideas and practices associated with it remain to this day. Circuit training, for instance, was developed as a component of military training. It was incorporated into the British PE curriculum during the second World War and still remains part of it (Kirk 2010). In Norway, too, PE teachers include circuit training in their instruction/teaching.

Between 1925 and 1960, scientific research in exercise physiology played a dominant role in Norwegian PE. According to Augestad (2003), concepts derived from the natural sciences have shaped contemporary understanding of the body. Consequently, mid-century PE adopted forms of exercise and activities designed to promote physical fitness and health. In that era, according to Augestad (2003), PE revolved around team sports, play and outdoor education. The growing importance of the sports movement in Norway (and throughout the world) was reflected in an increased emphasis on sports in PE (Augestad 2003). The same phenomenon has occurred in other countries. Kirk (2010) argues that the idea of PE as sport techniques has dominated the PE curriculum internationally from 1950 until the present.

Research on present teaching practices in Norway and Sweden

In Norway, PE is designated as a subject that contributes to general education and to broad movement competence (Udir 2012). However, Mordal Moen (2011), as well as Borgen and Engelsrud (2015), have suggested that there is a gap between curriculum objectives and actual teaching practice. Unfortunately, research on current Norwegian PE teaching practice has been limited. Therefore, for the purposes of this study we have also drawn on research conducted in Sweden. Given the similarities among the Scandinavian countries' school systems and national curricula, it seems reasonable to assume that there is a 'Scandinavian model for PE' (Annerstedt 2008, 315).

Current research suggests that improving physical fitness is regarded as a fundamental goal of PE lessons (Ekberg 2016; Larsson and Karlefors 2015; Svennberg 2016), and that knowledge derived from exercise physiology still exerts a huge influence on teaching practice. Larsson and Nyberg (2016) argue that activation is the fundamental discourse of Swedish PE teachers, illustrating their point with the comment of a teacher that 'It does not matter how they (the pupils) move as long as they move.'

A number of studies have shown that PE continues to emphasise sports and physical training (Larsson and Karlefors 2015; Säfvenbom, Haugen, and Bulie 2015). Given the current uncertainty about PE's purpose and learning objectives (Ekberg 2016), it is not surprising that 'old' traditions and habits seem to predominate (Redelius, Quennerstedt, and Öhman 2015).

The emerging fitness culture in the broader society also exerts a profound influence on individual experiences with movement and exercise. For example, Walseth, Aartun, and Engelsrud (2015) have noted how fitness centres appear to have affected the subject content/activities (e.g. Tabata) in Norwegian PE, due to that, school gyms keep equipment and organisational structure the way fitness centres do.

Summing up, although current PE teaching practice reflects different discourses, an exercise physiology/activation approach seems to predominate. However, analyses of historical material and research on current teaching practice have also identified concepts, ideas and practices derived from sports, fitness culture and the military.

Analytical framework

This study is part of the first author's PhD project, which has as its primary aim an investigation of the constitution of PE in teaching practice, with particular attention to how teachers produce PE. As some of the concepts cited in the introduction suggest, this research project is inspired by the work of Michel Foucault (1972, 1977, 1978, 2002), and relies on discourse as a core concept.

According to Foucault (1972), a discourse induces statements to coalesce, producing a particular meaning or effect. Discourses define and produce the objects of knowledge. According to Hall (2004, 72), they 'rule in' certain ways a topic can be talked about and acted on. Concomitantly, they 'rule out', limit and otherwise restrict alternative ways of talking about and acting on the same topic. Within a certain discourse some statements (and practices) may appear normal, natural and meaningful, while others do not. Consequently, for example, when a PE teacher says that the purpose of a lesson is vigorous activity, such a statement appears reasonable, obvious and understandable within an exercise physiology discourse. In contrast, if the teacher were to announce that the goal of the lesson was to be low activity, or meditation, such a statement would likely occur to the pupils as strange, and probably be questioned.

Augestad's (2003) analysis of historical material in Norwegian PE, and research on current PE teaching practice, illustrate that a configuration of discourses constitute teaching practice. Seemingly, exercise physiology/activation discourses are dominant in teaching practice. However, even if previous literature indicates that some discourses are more dominant than others, Foucault (1978, 100) urges us to '...not imagine a world of discourse between accepted discourse and excluded discourse, or between the dominant discourse, and the dominated one; but as a multiplicity of discursive elements that can come into play in various strategies'. Due to Foucault's warning, we are aware of this in our analyses and we remain open to new revelations and diversities in teaching practice.

As already noted, and as a discourse analytical approach suggests, PE teachers (the subjects) take positions in the discourse. They are not positioned in a single discourse, rather, 'different discourses give the subject (PE teacher) different, and possibly, contradictory (subject) positions from which to speak' [that is, teach] (Jørgensen and Phillips 2002, 17). In other words, when teaching, PE teachers draw on, and teach through a variety of discourses in their teaching, and thus, different discursive elements are brought into play by the teacher. In this respect, these discursive elements have effects on the constitution of teaching practice, thus, teaching practice seemingly appears in multiple, and sometimes contradictory, ways.

Empirical context and methods

Selection of informants and schools

The empirical context for this study is four upper secondary schools in Oslo, Norway. It was approved by NSD (Norwegian Centre for Research Data). The selection was a convenience sampling, but one requirement was that the teachers in our study sample would all be experienced PE upper secondary teachers. We sought, and succeeded in recruiting, both male and female teachers, as well as both senior and relatively young teachers. In the selection of schools we strived for as much divergence as possible. Consequently, our study includes older schools and newer ones, as well as schools in both Eastern (lower socio-economic) areas of the city and Western (higher socio-economic) neighbourhoods. The sample includes pupils from various study programmes at the schools (general study programme, vocational study programme, sports and PE programme). Eight teachers participated in the study: two females and six males. Their age ranged between 30 and 55. Each of the teachers had at least 180 ECT credits in

sports/PE. Recruits were provided with oral and written information before they gave their consent to participate.

Producing data material

The first author conducted fieldwork during the winter and spring of 2015. The fieldwork included observations of PE teaching practices and interviews with all eight PE teachers. The observation material consists of 92 PE lessons, approximately 15 hours of which were video-recorded. Besides observed teaching practice, the observation material includes informal conversations with teachers and pupils in PE situations. The first author also interviewed the teachers about their teaching practices and understanding of PE. The interviews lasted 60–100 minutes, were tape-recorded and subsequently transcribed.

Preunderstanding of PE

All three authors are former pupils, teachers and teacher educators in PE in Norway. Studying one's 'own' culture, and thus discourses close to oneself, is particularly challenging, since discourses must be treated as socially constructed meaning-systems that could have been different (Jørgensen and Phillips 2002). Consequently, when the first author who mainly undertook the data production observed teaching practice and wrote field notes, he followed Foucault's 'methods' and Jørgensen and Phillips' (2002) advice to researchers investigating their native culture by 'assuming' the role of an anthropologist studying a native culture and 'distancing' himself as much as possible from acquired presumptions regarding PE teaching practiceⁱⁱ. This process involved questioning and striving to understand actions and speech that appeared as common sense and meaningful to the subjects in the practice called 'PE'. In other words, the task was to be open to 'what happens', and, at the same time, to direct the attention to the rules, standards, norms and reasoning which allow us to recognise a practice as 'PE'. When writing field notes, the guiding questions were: Which central concepts are used in teaching practice? What do the PE teachers say to their pupils? How do they impart their ideas and how often? What happens when a teacher says what he/she says? What seems to be the purpose of the actions taking place? What actions are emphasised? What are the 'rituals' in this practice?

However, in confronting the problem of the researcher's role, adopting the stance of an anthropologist was merely a useful starting point. As Jørgensen and Phillips (2002, 21) point out, 'if the research project is based on a social constructionist perspective, the problem of the researcher's role goes much deeper and needs to be tackled reflexively'. However, even if reflexivity is important, a Foucauldian insight is also that the bodies are involved in processes indicating blind spots. Researchers depend on others to detect and problematise, in order to make the research process as transparent as possible.

Process of analysing

The starting point for the first author's interest in the topic explored in this article is described in the introductory example, when he observed vigorous activity changing value. This was immediately apparent during the fieldwork. When the formal analysis of the material began, he scanned the observation material in order to obtain an overall impression of the material (Barker and Quennerstedt 2016), in which he searched for similar incidents. This incident/situation is seen as a discursive struggle (Börjesson 2003), and the concept became relevant in the process of further analyses. This is in line with what some researchers call a 'didactic moment' (Quennerstedt et al. 2014). Being attentive to situations in which PE teachers were saying and doing 'things' related to a change of values assigned to vigorous activity enabled him to be particularly sensitive to ways in which that shift could be related to how discourses produce 'things' (Foucault 1972, 49).

Further, in the analysis, he looked for patterns and regularities in the teachers' statements and actions while teaching (Webb, Quennerstedt, and Öhman 2008), which guided our analysis in regards of important knowledge/performance related to this phenomenon. In the further analysis, all three authors contributed by reading and re-reading the observation material in which vigorous activity changes value, beneficial and punitive. Additionally, as the use of vigorous activity as punishment became central in our analysis, we included one interview sample, because one of the teachers was stating explicitly that he utilises activity/exercise as punishment in his teaching.

Finally, after having decided on our empirical extracts, we developed topic headings which enabled us to link the extracts with the different discourses that PE teachers draw on in their practice (Larsson and Nyberg 2016). In line with Webb et al (2008), literature on the history of PE and literature on present Norwegian and Swedish teaching practice have played a central role in the discussion on how these discourses are brought into play. Each of the three authors were involved with the discussions relating to which discourses the teachers were drawing on in their teaching during which time vigorous activity was ascribed a new value.

Findings

In our material, a vigorous activity discourse constitutes teaching practice. All teachers emphasised vigorous activity while teaching and the importance and beneficial value of improving physical fitness and health. However, without any explanation from the teachers, the purpose of vigorous activity consistently changed value, from beneficial (a positive value) to punitive (a negative value). In the next section, we will present our analysis of how vigorous activity was presented as beneficial to pupils' physical fitness and health.

Vigorous activity as beneficial to the promotion of pupils' physical fitness and health

We identified two major benefits attributed to vigorous activity: compensation for sedentary living and a way to get fit.

Vigorous activity as compensation for a sedentary lifestyle

All of the teachers stressed the importance of vigorous activity in their teaching practice. This emphasis was particularly evident in organised activities (fitness and ball sports), where it was employed to encourage active and high-intensity participation. Specifically, the teachers explicitly informed their pupils that vigorous activity is crucial to achieving fitness and a healthy constitution. The message is that vigorous activity is beneficial and valuable. One illustration of how this message was imparted appears in a lesson involving Tabataⁱⁱⁱ, followed by an open choice of ball sports (football, basketball or floorball).

At the end of the lesson, the female teacher gathers the pupils and enquires into the experiences they drew from this lesson: 'How did you perceive this training session? Exhausting?' She continues by explaining that 'the reason we do cardio exercise is that it boosts the heart muscle. We will feel more energized on weekdays, and we prevent diseases. Indeed, lack of exercise produces lethargy. In fact, exercise gets easier if it is performed on a daily basis. We only have one body, which is designed to move. In the old days people didn't need to exercise in training studios, but today's electronic appliances contribute to an inactive lifestyle. Therefore we must compensate by exercising. You should combine strength training with some endurance training. This will make your future life easier'.

In this instance, the teacher argued that exercise is essential to combat a physically inactive lifestyle, emphasising that 'we only have one body', which is 'designed to move'. She suggested that organised exercise was not essential in the past, but today's numerous

electronic appliances encourage a sedentary lifestyle. Viewing one's body as 'something to be exercised' connotes an instrumentalist view of the body as an object designed to consume energy. The promise that exercise will make life easier in future is a prominent feature of the teacher's argument. Such ideas about what would constitute a physically easy life and how to achieve it are consistent with what Öhman and Quennerstedt (2008, 370) call a *physiology discourse*. The teacher's reasoning was that training makes the pupils feel good *after* exercising, and that exhausting oneself is a prerequisite both to feeling energised and to avoiding many diseases, making life easier in the future. The message is that by exhausting themselves, pupils become fit and thereby enjoy a more comfortable life.

If you want to get fit you have to be exhausted

The assertion that exhaustion promotes physical fitness and health is further illustrated in the episode described below. This activity was led by two teachers, one male and one female. When the Tabata activity was over the class took a break, after which the teachers introduced team games. Here is how the two teachers addressed some of the pupils.

The female teacher starts by asserting: 'This (the activity the class has just completed) is a beneficial exercise if you want to get in shape. However, if you want a smoother session next time, what's most important is to reach the point of exhaustion.' The male teacher turns to some of the pupils sitting nearby and says: 'Do you see how fast this goes...?' (The exercise, I assume he means). He continues: 'If you do this three times a week, what happens then?' Echoing what the teachers at this school present as 'truth' about exercise, one of the pupils responds, 'It becomes easier and easier.' However, another pupil offers a disputatious response in a low voice: 'You die.' The male teacher responds to the first pupil: 'Yes, and then the fun starts!' The second pupil once again dissents, saying 'No....' in a low voice.

In this example, the female teacher, apparently drew on an exercise physiology discourse,^{iv} emphasising the value of strenuous exercise. The male teacher then initiated a discussion of appropriate exercise frequency (thrice weekly) by asking the pupils how often they thought they should perform this type of training. This may suggest that the teacher was attempting to elicit knowledge that comes from exercise science, which would be presented as a 'truth' in this context (Larsson and Nyberg 2016). One of the pupils took the teacher's cue, repeating his mantra that exercise will be less taxing next time. However, another pupil refused to accept this 'truth', asserting sotto voce that exercising vigorously thrice weekly would lead to 'certain death'. When the teacher went on to claim that (vigorous) exercise becomes fun as fitness levels improve, this pupil retorted a 'No'. The teacher ignored this comment as well. The pupil's denial that vigorous activity is good for you represents what Öhman and Quennerstedt (2008) characterise as a marginal position. In this instance, it was neglected and ignored.

Consistent with previous studies (Larsson and Nyberg 2016; Öhman and Quennerstedt 2008), our findings confirm the prevalence of a teaching practice that emphasises the advantages of active participation and vigorous intensity.

Vigorous activity as punishment

We also identified two ways in which the teachers used vigorous activity/exercise negatively: as punishment for a disobedient pupil, and by assigning additional exercise to losers in a competitive activity.

Rebuking a disobedient pupil

Some teachers appeared to utilise exercise as punishment to regulate pupils' behaviour. In the following example, the teacher organised a lesson with exercises designed to develop

skills in floorball, dividing the pupils into opposing teams. Before the game started the teacher explained its essential rules to the pupils. Two boys disrupted the presentation:

The teacher looks at the two boys who interrupt him and says: 'Ali, Steinar, I want you both to do 30 bouncy jumps, right now'. The two boys chuckle and look at the teacher, but ignore his command.

Teacher: 'Now!'

The boys start to perform the bouncy jumps immediately.

Teacher: 'You aren't bending your knees enough!'

The entire class stares at the two jumping boys. Some begin a countdown: 'Ten, nine, eight...'

After the boys complete their jumps, the teacher resumes his instructions. Then the floorball game starts.

In this instance, the teacher assumed the role of a leader/boss, with the pupils as his subordinates. Determining and penalising disobedient behaviour has a long tradition in PE teaching practice (Augestad, 2003). In this case, the teacher ordered the boys to do additional exercises. At this point, the value assigned to vigorous activity changed from something beneficial to something punitive: the exercise demanded by the teacher (bouncy jumps) signified corporal punishment.

Exercise is a disciplinary tool unique to PE, according to Cothran and Kulinna (2015). They note that despite a national position paper criticising this practice, it continues to be a widespread practice in PE settings as well as in sports. Even so, little data exist as to its frequency (Burak, Rosenthal, and Richardson 2013).

Several disciplinary techniques are commonly used in PE teaching practice to tame pupils' bodies. In one of the interviews, a teacher declared the core values in his teaching practice: activity, learning and fun. After the first author asked him if these values were consonant with the use of physical fitness tests, the teacher began talking about his use of punishment:

Teacher: You witnessed plenty of my teaching, so you must be aware of my punishing the pupils, right? If the pupils are disobedient, when they are disruptive, I'll tell them: 'Okay, now we'll run laps because you need to get rid of your excess energy.' Then they have to run laps.

Researcher: Yes, I've noticed that you practice something you call 'up in rest position'.

Teacher: 'Up in rest position' is when everyone has to stand in a circle in a high push-up position until I'm done with what I want to say. If someone talks, the whole group is required to remain in this position until I finish talking. Of course, everything depends on how you present this kind of regime to the pupils. If you order them to do stay 'up in rest' or run laps without a twinkle in your eye and don't communicate well with the pupils, they will perceive the practice as meaningless and onerous and begin to hate PE. In situations where a teacher wants to calm down an agitated group to get instructions across and start activities, my experience is that this method is an effective way to create functional group dynamics.

This teacher performed these exercises alongside his students. He also had a reasonable rationale: if pupils are too boisterous when he is instructing the group, it must mean their bodies are exploding with too much energy. Running laps burns it off. During the observation, the first author did not witness this 'technique', but he did observe what the teacher referred to as 'up in rest position'. This connotes a body posture in which the pupils get in a high push-up position, touching the ground at four points. This is a relatively strenuous and immobile exercise that allows no escape routes. It may resemble a modified form of pillory. The teacher required pupils to take this position whenever pupils disrupted his instruction on the premise that it calmed their bodies and moderated their over-energetic behaviour.

It is significant that this teacher performs the 'up in rest position' with his pupils, and he is careful to employ humour and comradely communication when he assigns this

'punishment'. In the observed instance, after the pupils completed the exercise, the teacher asked them to resume their rest position. In other words, the pupils' experience following their 'exercise as punishment' made it seem natural within the PE context. From a Foucauldian perspective (1977), this would indicate that the pupils are embedded within discourses that do not view punitive practices as something negative within the PE context.

Additional exercise used as 'punishment for the losers'.

The imposition of penal exercise differed from ordering exercise to punish disobedient pupils. The example below, like the one in the introduction, concerns a situation where the teacher assigned extra exercise as a 'punishment' for losers in competitive play. In this situation described here, two teachers each had their class present. They began the lesson by playing volleyball on opposing sides, along with some of their pupils. After warm-up play, one of the teachers announced, 'We'll start at zero-zero and play games to seven points. The losers do twenty push-ups.' When one of the teams got seven points, the losing team immediately performed push-ups, after which a new game began. Typically, in the world of sports or in other competitive contexts, winning participants receive awards. In this situation, the winners' reward is to be exempted from further exercise. While these winners relax, the losers are obliged to perform additional exercise. The exercise thus has a penal component, at odds with the usual PE conception that exercise is something good.

Discussion

Our findings show that PE teaching practice generally presents the development of physical fitness through vigorous activity as important and valuable. Extensive scientific knowledge derived from physiology and exercise science prescribes an optimal way to achieve physical fitness. The worthiness of this goal is based on the premise that improving physical fitness can result in good health from a medical perspective. However, critical researchers (Kirk and Colquhoun 1989; Johns 2005; Tinning 2010) argue that these interrelationships are based on one-size-fits-all thinking, a (misleading) assumption that a certain dose of physical activity guarantees physical fitness, which leads to good health. In addition, our findings show that Norwegian PE actually has a more ambivalent attitude toward the value of vigorous activity.

Discipline and punishment have been linked throughout the history of schooling the body (Foucault 1977). Traditionally, teachers/instructors have been granted the right to assert their disciplinary power by demanding that a disobedient pupil perform additional workouts and/or punishing drills (Markula and Pringle 2006). The teacher's use of an 'up in rest position' as a punishing drill, described above, provides an example of how a teacher can penalise pupils' behaviour to render them docile. However, in this instance, the teacher's description of his disciplinary technique shows that he is aware of the importance of 'a twinkle in his eye' when applying it. This is 'a much looser form of power over the body' quite different from what Foucault has called a 'heavy, ponderous, meticulous and constant' expression of power (Foucault 1980, 58). His description would be an accurate characterisation of the punitive exercise imposed frequently by PE teachers when Ling's Gymnastics and military practices dominated teaching practice.

Within a military context, building physical fitness and discipline play a critical role in training. It is common practice for officers to discipline their subordinates by inflicting punitive exercise for minor misdemeanours. Hence, when officers utilise vigorous activity/exercise as a form of punishment, they achieve two distinct purposes: disciplining the soldiers in a manner deemed appropriate in a military context and compelling them to raise their level of physical fitness.

The use of exercise as punishment in military training may provide a reasonable explanation for the imposition of vigorous activity/exercise as punishment by many PE teachers. Even so, one may ask why this particular disciplinary tool – exercise as punishment – exists in a PE context today. The historical roots of its use in PE can be readily identified. In the late nineteenth and early twentieth century, the connection between the military and PE was much closer than it is now. Moreover, in the first decades following the establishment of Norwegian School of Sport Sciences in 1969, all of its instructors had military backgrounds (Olstad and Tønnesson 1986). This could explain the prevalence of military practices in the education/training of coaches and PE teachers. Additionally, many young men and women in Norway enter military service before they embark on higher education and work; all soldiers pass through mandatory training in which officers employ exercise as a disciplinary tool. It might well be the case that the PE practice of many instructors has been influenced by their military experience. The military-PE connection has been observed in other countries as well. Kirk (2010), for instance, writes that the competencies in performing different physical tasks that many British soldiers acquired played a major role in the steadily increasing numbers of male physical educators after the second World War. It should also be noted that PE Teacher Education (PETE) affirms the concept of PE students as sportsmen/women (Mordal Moen 2011) and the imposition of exercise as punishment is a relatively common practice among sports coaches (Richardson, Rosenthal, and Burak 2012). For all these reasons, the use of similar practices in PE teaching seem to persist.

Our findings also shed light upon the use of vigorous activity as a ‘punishment’ for the losers in competitive activities. As noted above, both research literature and our empirical material show that PE instruction typically includes making a close connection between vigorous physical activity, fitness and health. Scientific knowledge derived from physiology and exercise science that makes these connections is obviously important, and should inform PE teaching practice (Kirk and Colqhoun 1989; Öhman and Quennerstedt 2008). According to this body of literature, to gain the best possible results, physical activity/exercise should be experienced as exhausting and even painful. During his fieldwork for this study, the first author more than once heard pupil exclamations such as ‘No pain, no gain’.

Because the concepts of pain and punishment are inherently related, it is not surprising that exhaustive and sometimes painful exercise is utilised as punishment in movement contexts such as sports and PE. Efforts of PE teachers to encourage high intensity levels might easily include a ‘threat’ that losing will result in ‘punishment’. In competitive activities such as relays the prospect of this type of ‘punishment’ could be invoked as a goad to greater intensity levels (sports discourse). However, the imposition of extra exercise as punishment appears to present a paradox, since it is in conflict with the comprehensive discourse that vigorous activity is solely positive and beneficial.

One possible explanation for the preoccupation with the physiological effects of vigorous activity observed in this study could be that several of the teachers combined their bachelor’s, or master’s, degree in Sports Biology/Physical Activity and Health with a practical course in Pedagogy/Education Science. We can find similar features in other countries. Tinning (2010, 171), for example, reports this:

By the early 1970s universities and colleges in Australia that were responsible for preparing teachers of PE were increasingly staffed by faculty who had undertaken postgraduate training in the USA. Most often these graduates had pursued higher degrees in the area of the biological/physical sciences ... Exercise science became the privileged knowledge of the field of PE in the decades of the 1970s and 80s and PE graduates increasingly tended to define their professional mission in terms of the promotion of healthy lifestyles based on the claimed health benefits of involvement in physical activity.

In this regard, and consistent with Green (2010), there is good reason to believe that many PE teachers emphasise vigorous activity in their instruction with the goal of improving pupil physical fitness and health. Consequently, the curricular mandate to teach movement gets short shrift.

Conclusion

Applying a discourse analytical framework enabled us to uncover a phenomenon that to our knowledge has not received attention in prior research literature on PE teaching practice: changes in the value assigned to vigorous activity. We argue that PE teachers draw on different and sometimes conflicting discourses, and that these conflicts are reflected in their teaching practice. Specifically, although vigorous activity is usually presented as beneficial to pupils' physical fitness and health, it is also used for punitive purposes.

Embedded within discourses operating in PE teaching practice, the imposition of exercise as punishment appears as a natural/normal practice that teachers and pupils take for granted (Burak et al. 2013). Prevailing discourses produce effects which seemingly prevent teachers (and pupils) from discerning these practice as paradoxical. In addition, it could be argued that utilizing exercise in a punitive way offers PE teachers an important and harmless classroom management tool. However, these practices could have the negative result of leading pupils to perceive movement and exercise as tasks one has to perform solely to secure 'an easier life in the future'.

Even though the Norwegian curriculum (paper) is influenced with education discourses (Leirhaug 2015), in practice other discourses appear to take precedence. In this respect, the pupils' experiences with regards to learning and moving wane. An important task for Physical Education Teacher Education should be to 'shake' (Mordal Moen 2011) the students' presumptions about PE practice by problematising how it is influenced by military, sport and exercise physiology discourses. We advocate that these discourses should be open for discussions in PE teaching.

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ⁱ Exercising characterised by active participation with vigorous intensity. We also use the term 'vigorous activity/exercise'.

ⁱⁱ The first author informed the participants in the study about his earlier experiences as a PE teacher and PE teacher educator, as well as the purpose of the research project. He noted that his research interest might lead him to ask some 'strange' questions.

ⁱⁱⁱ Tabata is a form of high-intensity interval training. In the observed school, the female teacher organised the Tabata in four rounds, with a two-minute break between each round. Each round consists of two exercises, bouncy jumps and sit-ups. One round might consist of 20 seconds of bouncy jumps, a 10-second rest, then 20 seconds of sit-ups followed by a 10-second rest, all repeated eight times. Some fitness centers in Norway include Tabata in their training programs.

^{iv} NTNU (Jan Helgerud and Ulrik Wisløff) is an acknowledged research staff who prescribes an interval program (4 x 4) as the 'best method' to achieve fitness.