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# 'What we have done now is more student-centred': an investigation of physical education teachers' reflections over a one-year participatory action research project

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## ABSTRACT

Although reflection has a key position in the development of teachers' pedagogical practices, few studies have investigated the development of physical education teachers' reflections over time. Against this backdrop, this study seeks to answer the following research question: 'How does a one-year participatory action research project using Cooperative Learning as a pedagogical intervention influence PE teachers' reflections about teaching and learning?' The first author, Lars, assumed the role of researcher-facilitator, supporting the teachers' pedagogical development while simultaneously collecting data relevant to the research question. Interviews, observation notes and the researcher's reflective diary were analysed using an abductive approach. The study concludes that the interplay between (a) new theoretical perspectives, (b) the establishment of a collectively reflective community and (c) the prolonged project duration eventually enabled the teachers to critically reflect upon their previous practices. At the same time, their journeys over the course of the project consisted of ups and downs and can be understood through three critical cycles: 'establishing systematic, collective and cyclical processes', 'new spaces of experience' and 'the tipping point'. Drawing upon our findings, we discuss various ideas for future educational action research projects aimed at challenging traditional practices within and beyond the PE context.

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## Introduction

Reflection has been the subject of considerable attention within educational literature for a number of years (Fendler 2003). Although there seems to be an *a priori* belief in the value of reflection for the development of teachers' practices (Fendler 2003; Tsangaridou and Siedentop 1995; Standal and Moe 2013), the concept of reflection is used in many different ways and draws on a variety of theoretical traditions and conceptual alternatives (e.g. Dewey 1910; Schön 1991; Van Manen 1977). Our understanding of reflection is inspired by Dewey's (1910) conceptualisation, which, in a broad sense, states that reflection can be regarded as a sequential experience that enables humans to progress from

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acting repetitively and on impulse to acting in a more intelligent manner. However, although reflection has the potential to enable teachers to transform educational aspirations into more virtuous forms of action (Elliot 2015), some forms of reflection have been criticised for being overly concerned with the technical questions of 'how' to solve educational situations or problems, rather than with 'why' questions (Leitch and Day 2000).

Since reflection and action research are typically mentioned in the same breath (McMahon 1999), we also find it necessary to outline how these two key constructs are understood in this study. Action research may be regarded as a deliberate and planned approach to solve a specific problem using a systematic and rigorous methodology (Lewin 1946), yet such strategic action is not necessarily integral to reflection (McMahon 1999). Reflection, however, is an essential component of action research; it can be developed through action research and can, at the same time, support the goals of action research (Trauth-Nare and Buck 2011). In this study, we investigate how establishing a participatory action research (PAR) influenced physical education (PE) teachers' reflections about teaching and learning.

If we consider the existing research on PE pedagogical practices, Elliot's (2015) claim that educational aspirations often remain unrealised in practice seems fitting. For example, teachers may place more emphasis on maintaining high levels of physical activity than on what students actually learn (Quennerstedt 2019), PE may be perceived merely as a break from academic subjects where students can let steam off (Morgan and Hansen 2008), and teachers may use direct instruction as their predominant pedagogical approach to delivering the entire breadth and depth of the curriculum (Kirk 2010). Consequently, while PE curricula across a variety of contexts highlight how the subject should promote students' physical, social, cognitive and affective learning, the dominant pedagogical practices fail to realise many of these aspirations (Casey and Kirk 2021). In response to this gap between formal curriculum and the pedagogical practices actually used in schools, researchers have long highlighted the need for pedagogical change in PE (Casey and Kirk 2021). In recent years, a growing number of studies have indicated how action research represents 'a prime opportunity' (Casey 2018, 24) for PE teachers to address criticisms and enhance their practices. Through the think–plan–act–evaluate–reflect spiral (Lewin 1946), PE teachers could be enabled to critically reflect upon their traditional practices and explore how alternative pedagogical approaches could benefit student learning.

In the next section we outline the lessons learned from previous research about facilitating reflection within PE that have informed this study.

## **Facilitating reflection**

One key finding in the research area is that establishing reflective communities is effective (Attard and Armour 2005; Dervent 2015; Tsangaridou and O'Sullivan 1997; Standal and Moe 2013). Such communities provide teachers with opportunities to reflect upon topics of mutual interest and may enable teachers to develop critical attitudes towards their own traditional practices (Dervent 2015; Tsangaridou and O'Sullivan 1997). However, 'merely putting teachers together will not necessarily result in productive discourses or substantive actions to improve their teaching context'

(Deglau et al. 2006, 427), so concerns have been raised as to whether and how such reflective communities should be moderated by outsiders such as researchers working at the local university (Keay 2005, 2006). A reflective community was successfully created in a study by Casey, Dyson, and Campbell (2009), where Casey was engaged in an action research project while working as a secondary-school PE teacher while the study's co-authors acted as critical friends. Through the action research approach using a pedagogical intervention, Casey was challenged by his own reflections, his co-authors and his own students. This in turn helped him develop a more student-centred pedagogical practice. Although he later suggested that 'insider action research and reflective practice should be seen as a vital ingredient' for educational change, he acknowledged how this process 'needs to go hand-in-hand with collaboration with significant others inside and/or outside the school setting' (Casey 2012, 231).

While efforts have been made to improve the reflections of in-service or pre-service PE teachers, research suggests that PE teachers rarely move beyond reflecting on a technical level (Tsangaridou and Siedentop 1995; Standal and Moe 2013). Jung (2012) revealed that even 'exceptional' PE teachers mainly reflected on the technical level, for example, on how different teaching methods might be more or less effective to reach specific goals. However, a couple of exceptions to this general observation are described in the literature. A study by Østergaard (2019), in which pre-service teachers were introduced to and practiced an inquiry-based approach to teaching over a six-week period, demonstrated that the new theoretical input and students' experiences of the inquiry-based approach supported the creation of higher levels of reflection as well as critical attitudes towards traditional ways of teaching PE. Derwent (2015) later supplemented these findings by highlighting how pre-service teachers moved from a technical level to higher levels of reflection over a ten-week action research project using a reflective thinking framework. Although these studies suggest that PE teachers' reflections might change over time (Derwent 2015; Tsangaridou and O'Sullivan 1997), little is currently known about the value of facilitating reflection over time in the context of PE (Standal and Moe 2013).

## Purpose

Given current knowledge about the dominant pedagogical practices in PE and the potential role PAR could play in challenging these practices, Lars (the first author) reached out to schools seeking to recruit teachers interested in exploring alternative PE pedagogical practices. This criterion sampling approach (Schreier 2018) led Lars to Forest Primary School (pseudonym), in which the whole PE department for grades 5–7 agreed to join the project. To anchor the PAR project in the teachers' wishes and needs (Lewin 1946; Kemmis and McTaggart 2008), the project began with Lars interviewing all participating teachers individually about what they would like to explore through the project. Based on their wish to explore a more student-centred approach to teaching PE, Lars suggested implementing Cooperative Learning as a student-centred pedagogical approach. All teachers agreed to this suggestion.

In addition to the practical purpose of enabling three PE teachers to explore a new pedagogical approach, the project also served a research purpose (Kemmis and McTaggart 2008). Given the lack of studies exploring PE teachers' reflections over time

(Standal and Moe 2013), this study aimed to answer the following research question: *How does a one-year PAR project using Cooperative Learning as a pedagogical intervention influence PE teachers' reflections about teaching and learning?*

## Understanding PE teachers' reflections

Although our understanding of reflection draws on the work of Dewey (1910), it remains somewhat unclear how Dewey actually understood reflection on a more concrete level (Rodgers 2002). To investigate how the PAR project might influence the teachers' reflections, we therefore drew on Wackerhausen's (2015) conceptualisation of reflection to support our analysis.

Wackerhausen (2015) suggests that although there are many understandings of reflection, there is a common pattern for all kinds of reflection, namely, 'the anatomical structure of reflection' (93). More precisely, Wackerhausen (2015) suggested that reflections might take different directions based on their four common features, namely that (a) we always reflect *on* something – that is, there is always an object for reflection, such as 'teaching'; (b) we always reflect *with* something – that is, we employ concepts, assumptions and knowledge, which could, for instance, be assumptions about direct instruction as an efficient way of teaching; (c) we always reflect *from* something, such as our interests, motivations and values – for example, a motivation to keep students as physically active as possible; and (d) our reflections always take place *within* a particular context, such as running alone in the forest, in a team meeting or at a pub. Even though the object of reflection is the same (e.g. teaching), reflections might be different depending on what we reflect with or from as well as the context within which we reflect. Dewey (1910) also highlighted the role of context and emphasised that reflections should always be shared within a community in which different perspectives and thoughts are represented.

Wackerhausen (2015) further divides reflections into two categories – first-order and second-order reflections – arguing that these are helpful in understanding how reflection might, or might not, influence teachers' practices and facilitate pedagogical change. First-order reflections refer to the problem-solving reflections that all PE teachers must make on a day-to-day basis to address practical problems – similar to what Schön (1991) described as reflection-in-action. Even though Wackerhausen (2015) acknowledges that first-order reflections are necessary, he argues that they will not influence teachers' practices and facilitate professional development and change. On the contrary, the educational value (Dewey 1910) of these first-order reflections may be questioned. For an experience to be educational, Dewey (1910) argued that the experience should pave the way to new and richer experiences in the future – for example, through revealing the limitations of current practices and how other approaches could be beneficial. To enhance the educational value, Wackerhausen (2015) therefore suggests that second-order reflections are required. These are reflections about first-order reflections, in other words, reflections about our own habits and traditional practices. Second-order reflections might, for example, enable PE teachers to critically reflect on and reveal the limitations of their traditional pedagogical practices as teachers, and, according to Wackerhausen (2015), help teachers challenge the status quo. At the same time, Wackerhausen (2015) warns that second-order reflections, or reflections on our actions (Schön 1991), do not

occur by themselves, and therefore suggests that one way of facilitating second-order reflections is to use new or unknown concepts, knowledge and theories to reflect *from* and *with*.

## Methods

Although Kurt Lewin (1946) originally depicted action research as a participatory and collaborative endeavour, educational action research gradually transformed into a more individual technique (Carr and Kemmis 1986). PAR advocates therefore requested a re-emphasis of the participatory and collaborative nature of action research as a social movement in which teachers can work together to enhance understanding of their own practices and the contexts in which these practices are situated (Carr and Kemmis 1986; Kemmis and McTaggart 2008). By collectively changing their practices – in this study, by implementing Cooperative Learning in PE – and sharing their individual experiences of these changes, teachers can together construct meaning regarding the change. PAR can thus be seen as a way to enable teachers to collectively improve their understanding of their practices and the contexts in which these practices take place and, in turn, to enable teachers to explore new teaching practices as they move through the self-reflective cycles of thinking, planning, acting, evaluating and reflecting (Lewin 1946; Kemmis and McTaggart 2008). Outsiders – for example, external researcher-facilitators – might enable even more productive discussions by presenting alternative perspectives or ideas to reflect on and helping teachers break through the theory–practice divide (Dewey 1910; Kemmis and McTaggart 2008).

## Setting and participants

Forest Primary School (pseudonym) is an average-sized public school in a medium-sized municipality in Norway, with approximately 225 pupils. The sample consisted of three trained male PE teachers: David, Ole and Erik (pseudonyms). David and Ole had qualified recently as teachers, having one year and two years of teaching experience, respectively, while Erik had around 25 years of teaching experience. Common among all three teachers was that they taught PE only 1–2 hours per week, as other subjects dominated their teaching schedules.

The first author, Lars, a qualified PE teacher with six years' primary-school teaching experience, acted as the project's researcher-facilitator (Kemmis and McTaggart 2008), not only to 'support disruption in participants' but also to 'enable them to maintain sufficient confidence in themselves as knowledgeable practitioners' (Cook 2009, 285). The researcher-facilitator role was inspired by Kemmis and McTaggart (2008), who criticised facilitators' attempts to remain neutral through adopting a merely technical role. Instead, Lars's relation to the participants in this project was as a peer with particular knowledge (about Cooperative Learning and PAR) that would be helpful in developing the teachers' practice.

**Table 1.** Five elements for cooperative learning (adapted from Dyson and Casey 2016; Johnson and Johnson 2009).

Element	Description
Positive interdependence	Students perceive that they can only succeed if the other team-members do. Students 'sink or swim together'.
Individual accountability	Each group member must complete his or her part of the group's total work.
Promotive interaction	Students help each other to reach the group's goals. They support each other, provide feedback, act appropriately, exchange ideas, and take account of each other's perspectives.
Group processing	The group reflect on what they have achieved, what they have done well, and what they need to change or improve.
Social skills	Students learn to use interpersonal and small-group skills, such as communication, accepting differences, conflict solving, and the ability to trust each other.

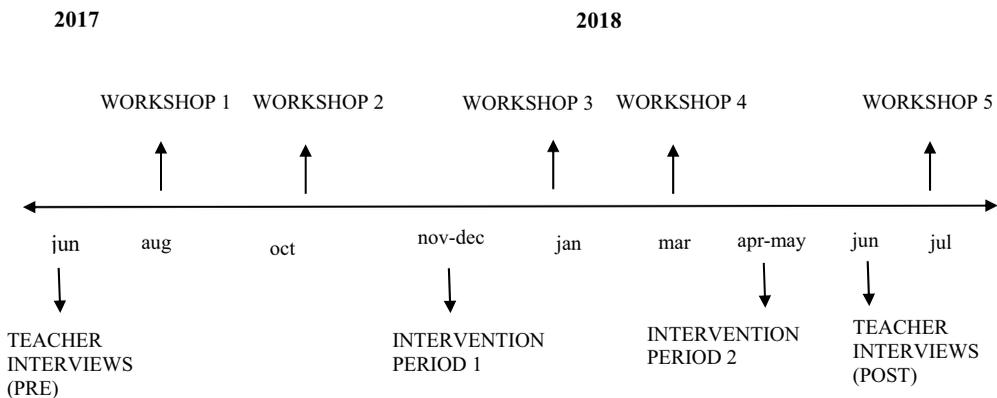
### The pedagogical intervention

The overarching idea for Cooperative Learning (CL) is that students can learn with, for and from each other in small, heterogeneous groups (Johnson and Johnson 2009). In strong contrast to direct instruction, much of the teaching is done by the students themselves, while the teacher assumes the side role of guide (Dyson and Casey 2016). The CL model is centred around five elements that guide teachers in planning and teaching (Table 1).

In this project, none of the teachers had prior experience with CL, although Erik said he had 'touched upon it' in other subjects. In comparison, Lars had a good theoretical understanding of CL but no practical experience.

The PAR design was created through close dialogue between the teachers and Lars. The design sought to support active engagement from all participants and create spaces for both individual and collective inquiry to support the teachers' implementation of CL (Kemmis and McTaggart 2008). A chronological profile of our design is given in Figure 1.

After the pre-interviews and agreeing on implementing CL, the teachers and Lars met in Workshop 1 to discuss the underlying learning theory of CL, its five key elements (see Table 1) and how it could be implemented (Dyson and Casey 2016). After *thinking* about CL, two lessons were collectively *planned*. In Workshop 2, the teachers and Lars went back to re-thinking CL, re-planning the two lessons and

**Figure 1.** Research design.

planning four additional lessons for intervention period 1. The objectives for these lessons were centred on students helping their peers develop floorball skills. Throughout intervention period 1, the teachers *acted* by completing the planned lessons with their classes, with Lars observing all the lessons. After the first intervention period was completed, Workshop 3 was used to *evaluate* and *reflect* on the completed period.

Although this represents one example of cyclical thinking, planning, acting, evaluating and reflecting design (Lewin 1946), it is important to highlight that the cyclical nature of the PAR project (Kemmis and McTaggart 2008) was evident at numerous levels throughout the course of the project (Casey 2018). For example, within the intervention periods, small changes were constantly made based on the teachers' ongoing experiences. These processes were guided by a modified version of the post-lesson teaching analysis (Dyson 1994) that enabled teachers to identify what worked well, what did not work and what the teachers wanted to change in the next lesson.

### **Data gathering**

Data were gathered from multiple sources to gain an in-depth understanding of the teachers' reflections over the project (see Table 2). Teachers were interviewed before and after the project in order to investigate possible changes in their reflections on teaching and learning. More precisely, teachers answered questions such as: 'In your opinion, what are students supposed to learn in PE?' and 'How do you view your own role in facilitating students' learning?' All interviews were recorded and transcribed. In addition, Lars compiled about 45 pages of observation notes throughout the 60 lessons, which included notes on students' and teachers' comments and actions. The five workshops, each of 2–3 hours, and the 60 post-lesson teaching analysis sessions (Dyson 1994) were recorded, but due to the large amount of data, neither dataset was fully transcribed. Instead, a summary was written immediately after each event, which included information about the teachers' comments and actions, and enabled Lars to return to particular parts of the interviews to further investigate specific aspects of the research question. Finally, the researcher's reflective diary was used to record informal conversations and important incidents or events relevant to the research question that occurred during the project.

**Table 2.** Summary of data gathering methods.

Method	Detail
Interview	Teacher interviews before and after the project, each lasting about 25 minutes
Observation notes	First author's notes from 60 lessons
Workshops	Five recorded workshops
Post-lesson teaching analysis	A modified version of Dyson (1994) PLTA was used after each lesson
Researcher's reflective diary	Researcher's reflective diary from the entire project (40 pages)

### ***Analysis, trustworthiness and authenticity***

As PAR aims to transform both theory and practice (Kemmis and McTaggart 2008), analysis was an ongoing and iterative process that served different purposes over the course of the project. To facilitate the teachers' pedagogical development, Lars sought to continuously analyse and interpret the data in the observation notes, post-lesson teaching analyses and researcher's reflective diary. This was then used to develop topics for individual and/or collective discussion on how to address the challenges arising through the course of the project. Although these analyses and interpretations were less formally structured, they helped Lars become familiar with the gathered data.

After completing the pedagogical intervention, Lars took one step back and systematically reviewed the data (see Table 2) for the research purpose of this study. As Lars's theorising had been initiated during the ongoing analyses and the comprehensive reading of similar studies, the next level of analysis took an abductive approach (Alvesson and Sköldberg 2018) comprising two phases.

In the first phase of our analysis, Lars analysed the teachers' interviews before and after the project to investigate how the teachers reflected on teaching and learning and whether their reflections had changed. The interviews were coded with a specific focus on the research question. In this process, codes such as 'sport skills', 'health', 'social learning' and 'instruction' emerged. These codes were then grouped into preliminary categories; for example, 'sport skills' and 'health' were grouped into a 'learning outcomes' category. After successive rounds of revisiting the data (coding, re-coding, adjusting the categories) and discussions between the authors, the categories were assigned to one learning-related theme (a clearer and expanded object of learning) and one teaching-related theme (new understanding and new tools).

In the second phase of our analysis, we sought to investigate the teachers' participation over the course of the project at a step-by-step level (Casey 2013) to recognise how teachers enter and exit 'mess' when engaged with action research (Cook 2009). Inspired by Tripp's (1994) notion of critical incidents, we identified three critical cycles that marked a significant change or turning point in the teachers' journeys. Two cycles – 'new spaces of experience' and 'the tipping point' – were initially identified (albeit with different labels) as they stood out as significant. This represents one example of how the abductive approach was found to be fruitful. Lars's ongoing analyses during the project provided some assumptions about cycles that could be relevant for closer investigation, while, at the same time, the approach made it possible to take a step back and look for nuances or contradictions in the material. This process of stepping back and re-investigating the data also enabled us to identify the third critical cycle – 'establishing systematic, collective and cyclical processes' (Alvesson and Sköldberg 2018). Our theoretical framework was then used as an analytical lens to enhance our understanding of teachers' reflections during the project.

Credibility was attained through Lars's prolonged engagement with the project and through triangulating multiple data sources (see Table 2). Respondent validation was also used to enrich understanding of the findings (Smith and McGannon 2018). Dependability was maintained through several discussions between Lars and the study's co-authors to challenge Lars's findings and conclusions. Furthermore, we

sought to establish confirmability by maintaining a reflexive attitude via the researcher's reflective diary. Finally, transferability was addressed through rich contextual descriptions (Lincoln and Guba 1985).

## **Ethics**

The study was approved by the Norwegian Centre for Research Data (NSD) and followed the Norwegian National Research Ethics Committees' ethical guidelines (The Norwegian National Research Ethics Committees 2014). Prior to the study, informed consent was obtained from all participants. All participants could withdraw from the study at any point without consequences.

## **Findings and discussion**

In this section, we first outline the findings from the first phase of our analysis, which helped us identify two themes in the development of the teachers' reflections over the one-year project. After that, we outline the findings from the second phase of our analysis that led to three critical cycles that helps us to better understand the development in the teachers' reflections. We relate these findings to other research, and we seek to better understand the teacher's reflections by applying our theoretical framework.

### ***A clearer and expanded object of learning***

The first key finding of this study was that the teachers gained a clearer idea of what the students were supposed to learn as the project progressed through time. More precisely, while learning in PE had not been an object the teachers reflected *on* previously (Wackerhausen 2015), the PAR project enabled the teachers to begin explicitly reflecting on what students should learn from participating in PE.

When the teachers were asked in the pre-interviews about what they thought students were supposed to learn in PE, all three teachers hesitated and showed signs of discomfort. Erik, the most experienced teacher, said that what students are supposed to learn 'is not something I normally think about' (pre-interview). Erik's statement is illustrative of all three teachers' responses, as they all, in different ways, expressed that they were not used to reflecting *on* learning in PE (Wackerhausen 2015). This should be understood in light of the existing literature on pedagogical practices in PE, which describes how educational questions in PE seem to be secondary to the idea that the purpose of PE is to give students a physically active break from academic subjects (Morgan and Hansen 2008; Quennerstedt 2019). Our findings from the pre-interviews show that even the idea that there is something to be learned in PE seemed distant to the teachers, as their focus was more on providing activities and content.

Although learning proved difficult to talk about at an explicit level, our analysis of the teachers' interviews revealed some of what the teachers perceived as important objects of learning at a more implicit level. Erik spoke for all the teachers when he said 'I begin with the easiest, what the typical PE teacher would do – jump straight to the sports, and the skills related to different sports, such as gymnastics. [. . .] But also, I'm thinking health' (pre-interview). This corresponds with the findings of other studies, where PE was found to be

perceived as a sports-oriented subject that also should address students' health (Kirk 2010; Quennerstedt 2019). The teachers in our study also stated that students should learn to enjoy physical activity and should feel happy in their PE lessons, similar what Quennerstedt (2019) previously have argued. This was highlighted by Ole, who said that:

If you meet a former student in twenty years and ask him whether he likes to move and to be physically active and the answer is yes [...] and he says that he was happy in PE lessons, then I think you have done a great job [as a PE teacher].

Overall, the data from the pre-interviews show that when the teachers reflected *on* learning in PE, they reflected *from* a motivation of ensuring that students experienced happiness in the lessons, learned sport techniques and improved their health (Wackerhausen 2015). Even though it still appeared difficult for the teachers to articulate the objects of students' learning in the post-interviews, they all stated more explicitly that there should be something to learn in PE and that each lesson should have specific learning objectives. One example of this change occurring through the course of the project was provided by Ole when he suggested that 'you have many objectives that students are supposed to learn. It has to be learning' (post-interview). All the teachers said that through the course of the project they had developed both their understanding of what students are supposed to learn and a more critical attitude towards their old habits and practices. For example, while reflecting on his prior understanding of learning in PE, Erik stated:

Previously, I was very focused on – what should I say? – skills. Now, we have three goals. The social goals have become really in focus, and it's not that they haven't been there before, but they have become more conscious for me.

Ole and David shared Erik's sentiment and emphasised how their engagement with PAR had made learning objectives in the social domain become part of what they believed students should learn in PE. In other words, in addition to allowing learning to become an object to be reflected *on*, the PAR project also challenged what the teachers reflected *from* and *with* (Wackerhausen 2015). For example, instead of reflecting *from* a motivation to maintain physical activity levels as high as possible, the teachers began to value the idea that students also can develop their social skills and competences. This supports the findings of Østergaard's (2019), who identified that using new theoretical input (i.e. CL) to reflect *with* and *from* (Wackerhausen 2015) can help teachers develop a critical attitude towards their own practices and understand how other approaches might benefit student learning.

### ***New understanding for teaching PE***

Another key finding in our study was that the teachers' engagement with the PAR project gave them a new theoretical understanding of how PE could be taught and provided them with tools to help transform this theory into practice.

When asked in the pre-interviews about how he usually taught PE, Erik suggested that this was not something he often reflected on (Wackerhausen 2015): 'You ask questions about many things that I normally do not think about' (pre-interview). His colleagues expressed similar thoughts, and Ole offered one explanation in the post-interview of why it was hard to articulate the way they taught:

It is very rare that we get the time to discuss the subject, objectives and teaching. And the time we do get disappears to everything else. Especially related to PE – there is no time for these kinds of discussions.

Put another way, Ole felt that there was no time or space for these reflections to take place *within* the busy daily schedule at school (Wackerhausen 2015). In the pre-interviews, however, all the teachers expressed, albeit in different ways, that direct instruction was their preferred – and seemingly only – approach to teaching PE. Erik acknowledged this by saying that 'unfortunately, I have to say that I use too much direct instruction.' The teachers suggested that direct instruction was a suitable approach given their emphasis on maintaining high levels of activity among students and on teaching how to correctly execute sport skills. Other research on pedagogical practices in PE suggests that such a heavy reliance on direct instruction is not unique to the three teachers in our study. On the contrary, it appears to be the normal and dominant approach to teaching PE (Casey and Kirk 2021; Kirk 2010; Quennerstedt 2019).

In contrast to the pre-interviews, the post-interviews indicated that the teachers had gained new knowledge about other ways of facilitating student learning and that this knowledge had enabled them to appreciate how another approach to teaching could facilitate new and richer experiences (Dewey 1910). Ole suggested that instead of merely thinking 'this is a ball; this is what you do with the ball; now do it', he became able to 'think of other ways that pupils can learn' (post-interview).

New ideas and perspectives about how he could teach PE made David feel that he had improved as a teacher over the project. When reflecting on his previous practices, he stated that 'This is my first year as a PE teacher, and in the beginning, I used to show them how to do it correctly too often [...] What we have done now is more student-centred' (post-interview). In his reflection on what they had done in the CL lessons, Ole stated:

This is a quite different way to do it. I used to show, explain and move around trying to guide each student individually. This gives me very little time to teach students. In these lessons, the students have become more self-directed and active in their own learning.

The teachers' roles transformed from what has been described as 'the sage on the stage' to 'the guide on the side' (Dyson and Casey 2016), and the teachers found this meaningful for both themselves and their students. In the post-interview, David described his experience of the new role as follows:

If you observe a group that does not work very well, you need to go over to the group and try to make the group work better without saying 'do it like this' and 'do this.' It is more like, 'How should I help them now, and why should I do that?' So, it's a different way to face the students. I think it is healthy – for both my students and myself.

As found by Casey, Dyson, and Campbell (2009), our study show that being engaged with PAR using a pedagogical intervention gradually enabled the teachers to develop transformative second-order reflections in which the limitations of their old habits were revealed (Wackerhausen 2015).

### ***Understanding the teachers' reflections***

Our discussion so far of the teachers' journeys through the PAR project mirrors how their engagement enabled them to reflect critically on their traditional practices as well as how using CL to reflect *with* and *from* (Wackerhausen 2015) facilitated new and richer experiences (Dewey 1910). However, this only tells half the story, as the second phase of analysis revealed how the teachers also encountered resistance, discomfort and challenges along the way. By acknowledging the 'messiness' of their journeys (Cook 2009), we can better understand the changes that occurred in the teacher's reflections through the course of the project. Therefore, we now explore the three critical cycles that shed light on the step-by-step progress of their journeys (Casey 2013).

#### ***Critical cycle 1 – establishing systematic, collective and cyclical processes***

The first critical cycle marking a significant change in the teachers' journeys was identified as the establishment of systematic, collective and cyclical processes (Lewin 1946) through PAR (Kemmis and McTaggart 2008), *per se*. We found that the teachers had trouble answering questions about teaching and learning prior to the project, as they were not used to reflecting on these topics. While it would probably be wrong to argue that the teachers had not reflected at all before the project started, it seemed that any pre-project reflections were most likely first-order reflections concerning how to face practical challenges (Wackerhausen 2015). In strong contrast, by joining the PAR project, the teachers became engaged with the systematic cycles of thinking, planning, acting, evaluating and reflecting (Lewin 1946) on teaching and learning in PE.

In addition to making teaching and learning an object to reflect *on*, joining the PAR project also established a new context *within* which these reflections took place (Wackerhausen 2015). These collective spaces (e.g. the workshops) were experienced in strong contrast to their previous experiences of being left to reflect alone. Similar to other studies' findings, we found that this collaboration enabled the teachers to move beyond technical first-order reflections and to develop critical attitudes towards traditional practices (Attard and Armour 2005; Casey, Dyson, and Campbell 2009; Casey 2012; Dervent 2015; Standal and Moe 2013).

#### ***Critical cycle 2 – new spaces of experience***

The second critical cycle refers to the facilitation of what Wackerhausen (2015) characterises as 'new spaces of experience' (91), in which the underlying ideas of CL of thinking, planning, acting, evaluating and reflection (Lewin 1946) were used to reflect *with* and *from*.

This cycle began with the theoretical introduction to CL in Workshop 1 ('thinking'), and then proceeded to the challenge of transforming these new ideas into actual teaching ('planning'). Erik, the most experienced teacher, stated that using the five elements of CL involved 'a lot of new ways of thinking' (reflective diary). When the teachers experienced practical teaching using CL for the first time ('acting'), these new spaces of experience

proved to be even more distinct from what they were used to. These new experiences were challenging for the teachers, with Erik saying he felt 'it was like entering a new world' (Workshop 3), and Ole admitting to feeling very insecure ('evaluating'/'reflecting'). In addition to causing some uncertainty in the teachers about their role as teachers, the students' experiences of CL the first intervention appeared to be negative, responding that learning from, by, with and for their peers was neither fun nor relevant as they were more interested in being physically active, sweating and enjoying (observation notes/reflective diary).

Even though these new experiences of planning and teaching through CL might have in one way facilitated second-order reflections by enabling the teachers to reflect on their old practices, these second-order reflections were not transformative at that time. Second-order reflections become transformative when they reveal the weaknesses of established practices and the possibility of other practices representing a better way (Wackerhausen 2015). However, as the teachers' initial experiences of CL were somewhat problematic, their prior practice of using direct instruction appeared to represent a better and more attractive option for them. Hence, rather than being transformative, the teachers' experiences of planning and teaching using a new and unfamiliar theoretical perspective (CL) made them view their prior practice (direct instruction) as a more comfortable, safe and relevant approach. The teachers even suggested that at that time they regretted taking part in the PAR project for example admitted Erik that they were thinking 'Damn! Why did we join this project?' (Workshop 4).

Our findings agree with Casey's (2014) suggestion that experiences of 'success' were crucial in facilitating teachers' pedagogical change. While using pedagogical interventions representing different ontological and epistemological positions on teaching and learning might be efficient, the outcomes are highly influenced by experiences from practical teaching situations. Prolonged interventions are necessary since experiencing such success seems to require hard and sustained work to move beyond the initial challenges of implementing new pedagogies (Dyson and Casey 2016). As it seems impossible to identify exactly how much time is needed for teachers to experience such success, similar projects in the future should place great emphasis on creating flexible project designs (Bjørke, Standal, and Moen 2021).

### *Critical cycle 3 – the tipping point*

The third critical cycle, the tipping point, highlights the point at which a minor series of small changes becomes significant enough to cause larger, more significant changes (Gladwell 2006). The tipping point metaphor is helpful in understanding critical cycle 3, which emerged between the third and fourth workshops.

After the challenges faced during the first intervention period, Lars became concerned about the sustainability of the project. He learned that one of the teachers was considering leaving the project, and although this was primarily for reasons external to the project itself, he feared that such a 'failure' in the first period would jeopardise the project's continuation. He evaluated his options ('thinking') by analysing the collected data (see Table 2), and it became clear that he took too much space within the PAR design: he had been responsible for presenting the theory and suggesting what could be done in the lessons, and often led

the discussions. Therefore, Lars decided to take a step back before Workshop 4 and to try instead to enable the teachers to share more of their views, ideas and thoughts ('planning'/'acting'). An example of how this was accomplished was by posing questions that the teachers had to address individually and collectively (reflective diary). After Workshop 4, Lars noted the following in his reflective diary ('evaluating'/'reflecting'):

[. . .] this was the best day so far in the project. The teachers showed more initiative, came up with many suggestions, and were generally more active in the planning of the next period. For the first time, I really felt that our community of practice benefited all. This was also the first time I've heard the teachers expressing, 'This was a good meeting.'

Lars's choice to take a step back helped restart the project and gave much-needed energy and optimism (reflective diary). One of the main challenges from the first intervention period identified collectively by the teachers and Lars in Workshop 3 was that the students did not feel they were 'positively interdependent' (see [Table 1](#)). After discussing how this could be addressed, the teachers came up with the idea of returning to 'Lesson Zero' (Dyson and Casey 2016) for the first lesson in the second intervention period. In this lesson, students did cooperative activities before they decided on names, rules and roles for the coming athletics period. Importantly, the teachers themselves planned this lesson, with Lars taking more of a consultancy role, and each teacher made different individual adjustments to meet the different needs of his own students (reflective diary). In retrospect, this 'really good Lesson Zero' (Ole, post-lesson teaching analysis) acted as a catalyst for the rest of the unit as it gave the teachers hope, courage and belief. These assumptions were confirmed throughout the second intervention period, as the teachers finally experienced both how students were able to learn from and with their peers and the benefits of teaching through CL compared with their traditional teacher-led pedagogy.

Although previous literature has suggested collaboration with external researchers to be key in facilitating teachers' reflections (Casey 2012; Deglau et al. 2006; Standal and Moe 2013), our findings also highlight the challenge of taking on the role of facilitator in PAR (Kemmis and McTaggart 2008). Lars's role as external facilitator involved a delicate balancing act. On the one hand, he needed to be in close proximity to the teachers, sharing ideas and perspectives with them to support them in challenging their own reflections on teaching and learning in PE (Cook 2009; Deglau et al. 2006). Similar to the reports of Keay (2005), we found that Lars was important in creating a truly innovative community that enabled teachers to develop second-order reflections (Wackerhausen 2015). On the other hand, our findings shows that it was important for the external facilitator to be conscious of his own presence in the project. We therefore argue that although outsiders can be effective in moderating reflective communities of teachers (Keay 2005, 2006; Standal and Moe 2013), facilitators must continuously adapt their roles to meet teachers' shifting needs over the course of PAR projects. This also requires more of the facilitator than merely subject-specific knowledge, as pedagogical awareness and the ability to self-reflect seem equally important in creating PAR projects that can enable teachers to develop reflections that challenge dominant practices (Wackerhausen 2015).

## Concluding thoughts

In this paper, we have demonstrated how three PE teachers, despite several challenges along the way, developed their reflections about teaching and learning through their involvement in a one-year-long PAR project. Although our study was conducted at one school and in one subject (PE), we believe that the findings are significant beyond this particular context. As Elliot (2015) suggests, 'even a single case study may have generalising potential' if teachers and researchers identify practically relevant features that might illuminate their own practices. Our ambition has therefore been to provide insight into how teachers and researchers can work together through PAR to challenge traditional practices in ways applicable to other educational settings.

To summarise, our study shows that the interplay between (a) using a pedagogical intervention that represents new ideas and perspectives on teaching and learning to reflect *from* (Wackerhausen 2015), (b) establishing a reflective community of teachers facilitated by an external researcher for these reflections to take place *within* (Wackerhausen 2015), and (c) giving teachers enough time to overcome initial challenges and experience success, gradually enabled the teachers to become aware of the limitations of their traditional practices and reflect on how another approach (CL) could benefit student learning. In other words, through their collaborative engagement with PAR (Kemmis and McTaggart 2008), teachers may be enabled to free themselves, as well as their students, from the strong grip of habits and to develop more virtuous forms of teaching (Elliot 2015). However, such transformative and emancipatory outcomes do not happen by chance, and our findings particularly highlight the need for ensuring prolonged and legitimate participation from all teachers in the PAR process.

It is also important to acknowledge that although the teachers voluntarily joined the project to explore new practices, they were in many ways satisfied with what they were already doing. However, through collectively experiencing and reflecting on different pedagogical practices throughout the PAR project, the teachers gradually developed a critical attitude towards these habits and came to realise how other ways of practicing PE could benefit both themselves and their students. Involvement with the PAR project can therefore be viewed as an educative experience that served as an emancipatory door-opener to richer experiences in the future (Dewey 1910). This acknowledges that while the limitations of one's own practices often are hard to perceive, using new theoretical perspectives to reflect *from* and *with* (Wackerhausen 2015) and enabling collective reflections through PAR may enable teachers to identify more virtuous teaching actions (Elliot 2015).

Given our findings regarding the significance of the teachers' practical experiences in the development of transformative second-order reflections (Wackerhausen 2015), we also acknowledge the need to consider actions as forming an integral part of the reflective process. We suggest, for example, that drawing on Dewey's (1910) conceptualisation of reflection as an experience that includes experimentation can provide an interesting framework for fruitful discussions on how PAR facilitates reflection. Through such discussions, reflection might become grounded in and considered a part of actual events rather than a cognitive process separate from action.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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