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What physical education becomes when pupils with neurodevelopmental disorders are integrated: a transactional understanding

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ABSTRACT

Background: Previous research on inclusive physical education (PE) has often focused on pupils with visible physical disabilities and how best to facilitate and adapt PE so that they can play an active role in the educational situation. Many lessons about inclusion have emerged from this important field. However, less is known about more ‘invisible’ variations. In Sweden, many pupils who are diagnosed with neurodevelopmental disorders (NDD), such as Attention Deficit Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder (ASD), are integrated into mainstream classes. These pupils are often more sensitive to demands and stressful situations and struggle to decode social interactions. When it comes to lessons in PE, little is known about how pupils with NDD experience the educational situation and what they need to do to be successful in PE.

Purpose: The aim of this article is to explore what PE practices become in classes in which pupils with NDD are integrated in terms of inclusion or exclusion processes. Drawing on the work of John Dewey, we suggest a transactional perspective on inclusion. This facilitates a non-dualistic exploration of inclusive PE and makes it possible to take the experiences of pupils with NDD and their peers into account.

Methods: In the article we use a transactional framework with a focus on *experience*, *meaning-making* and *habits* using the following analytical questions: (i) What are the experiences of integrated PE? (ii) How do these events appear as inclusive? (iii) How do they appear as exclusive? The data generation consisted of 9 field observations and 13 individual interviews with pupils aged between 10 and 11 years in three classes in two different schools in one municipality. The municipality was awarded a grant by the Swedish authorities to work towards the creation of more favourable school situations for pupils with NDD. Three classes in which pupils with NDD diagnoses were integrated in PE were selected.

Findings: The study identified four PE practices in which inclusion and exclusion processes were prominent: (i) to organise, (ii) to cooperate, (iii) to sweat and (iv) to win. ‘To organise’ is a comprehensive practice that is transactionally identified and foregrounded by teachers’ actions. The other three are embedded in the practice ‘to organise’, which foregrounds pupils’ actions. The study shows that pupils are included in a certain kind of PE practice when it becomes an organised practice of sweating, competing and cooperating.

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Neurodevelopmental disorders; physical education; inclusion processes; exclusion processes

Conclusion: The study reveals that some of the inclusive practices that are designed to support pupils with NDD exclude other pupils with or without NDD. Accordingly, working in an integrated way can be both inclusive and exclusive. It would thus seem that successful inclusive education in PE is as much about group dynamics as about 'individual pupils with problems'. In order to achieve inclusion, teachers need to focus on actively communicating with pupils, colleagues and parents, on how and what to teach and on what students are supposed to learn.

Introduction

In school physical education (PE), research on equal opportunities and inclusion has mainly focused on issues such as gender, sexuality, ethnicity and social class (e.g. Azzarito and Hill 2013; Coates 2012; Flintoff, Dowling, and Fitzgerald 2015; Lynch and Curtner-Smith 2019; Stride 2014). To date, less attention has been paid to disability. Most studies have instead focused on exclusion and how to facilitate and adapt PE so that individual pupils with physical disabilities can be included (e.g. Overton, Wrench, and Garrett 2016; Lieberman and Block 2016; Fitzgerald and Stride 2012; Healy, Msetfi, and Gallagher 2013; Maher 2016). Several important lessons about inclusion in PE have emerged from this important field, although less is known about the inclusion of more 'invisible' disabilities in PE, such as pupils diagnosed with neurodevelopmental disorders (NDD) like Attention Deficit Hyperactivity Disorder (ADHD) or Autism Spectrum Disorder (ASD) (see Ericsson and Cederberg 2015; Lamb, Firbank, and Aldous 2016; Obrusnikova and Dillon 2011; Arnell, Jerlinder, and Lundqvist 2018).

In Sweden, which is the context of the present study, many of the pupils who have been diagnosed with NDD are organisationally integrated into mainstream classes in all school subjects. However, these pupils are often more sensitive to demands, stressful situations and have to struggle to decode social interactions in class (Ehlers, Gillberg, and Wing 1999; Arnell, Jerlinder, and Lundqvist 2018; Lamb, Firbank, and Aldous 2016). This poses different challenges in different school subjects. The overall aim of this article is therefore to explore what PE practices become in classes in which pupils with NDD are integrated in terms of inclusion or exclusion processes. Drawing on the work of John Dewey, we suggest a transactional perspective on inclusion. This approach facilitates a broad and non-dualistic exploration of inclusive PE, thereby making it possible to take the experiences of pupils with NDD and their peers into account.

Inclusion and disability in PE

In our review of the literature on inclusion and disability in PE practice, studies focusing explicitly on pupils with NDD are few and far between. This also applies to disability studies in general, with important exceptions like the significant work of Fitzgerald and Stride and colleagues who explore inclusion and disability from a pupil perspective (e.g. Fitzgerald 2009; Long, Fitzgerald, and Millward 2011; Fitzgerald and Stride 2012). Many studies instead focus on exclusion from an organisational or teacher perspective, and how pupils with physical disabilities from this perspective can be included (e.g. Overton, Wrench, and Garrett 2016; Lieberman and Block 2016; Healy, Msetfi, and Gallagher 2013; Maher 2016). In studies from the last decade with a pupil perspective, pupils report less motor engagement in PE than their 'non-disabled' peers and also express social isolation in class, even though pupils with disabilities can benefit from social interactions in inclusive PE (Qi and Ha 2012). This complexity is further illustrated in a review by Rekaa, Hanisch, and Ytterhus (2019), who report that in some studies pupils experienced a lack of belonging in PE, whereas in more recent studies pupils expressed feelings of joy and belonging in their PE classes.

With this complexity in mind, some of the findings in previous research contribute to the discussion about including and excluding pupils with NDD in PE. For example, the lesson content has proved to be a key factor, in that the domination of competitive team sports has been noted as limiting the possibilities for inclusion (Fitzgerald 2018). Pupils with disabilities also require specific recognition and access to educational resources in order to be included in PE practices (Overton, Wrench, and Garrett 2016). In relation to NDD, Obrusnikova and Dillon (2011) argue that PE teachers need to know more about ASD so that they can adapt their instructions and offer more inclusive education to pupils on the spectrum.

Lamb, Firbank, and Aldous (2016) further showed that pupils with ASD reported positive experiences of PE when they were allowed to engage and perform well in team sports in their own ways and according to their abilities. However, they also reported that these pupils dreaded the changing rooms and felt safer in the corridor outside the PE teacher's room. Likewise, personal safety was an issue in the study conducted by Healy, Msetfi, and Gallagher (2013), in which pupils with ASD were interviewed about their experiences of PE. Individual obstacles were identified, such as low motor abilities, although the main finding was the impact of social relationships, where several pupils also mentioned situations in which they felt appreciated by their peers (Healy, Msetfi, and Gallagher 2013). Furthermore, Arnell, Jerlinder, and Lundqvist (2018) concluded that pupils with NDD participated more often in PE if certain conditions were fulfilled. They showed that pupils wanted to know who they were supposed to participate with, and that they had a clear role in the activity so that they could succeed.

The need for more knowledge about pupils with ASD and how they function, especially in team games and competitive sports, is also highlighted in a study by Maher (2018). However, it is important to note that inclusive PE does not have one general solution. Rather, as Petrie, Devcich, and Fitzgerald (2018) argue, inclusive PE should ideally have a multi-layered approach, where pupils also share responsibility for the curriculum design and their own learning.

To sum up, research has revealed different experiences of inclusion and exclusion for pupils with NDD, although less is known about inclusion and exclusion processes in PE practice in general. Our conclusion aligns with that of Wilhemsen and Sørensen (2017), which is the need for studies to focus more on the pupils' own viewpoints in order to unpack the complexities of inclusion in PE practice. So, in order to explore what PE practices become in classes in which pupils with NDD are integrated, a perspective is required that can take the experiences of these pupils, their peers and the practice of PE into account.

A transactional perspective on inclusion and exclusion in PE

In this article we use a transactional framework that draws on the work of Dewey and Bentley (1949/1991) with a focus on *experience*, *meaning-making* and *habits*. Here, meaning-making refers to how experience and habits contribute to the pupils' (in our study) creation of micro-environments in which they can pursue and realise their interests through their ends-in-view (Maivorsdotter and Andersson 2020). In the active process of micro-environment creation, pupils incorporate some conditions and disregard others in a process of 'environing' (Andersson, Garrison, and Östman 2018, 100–102). This transactional understanding of environment is here used as an argument for exploring the inclusion of pupils with NDD by observing PE practice and interviewing all the pupils in a class, rather than exclusively focusing on the experiences of pupils with NDD.

In a class, pupils with NDD and their peers share the same micro-environments in which they develop certain ways of 'environing'. In order to explore the inclusion and exclusion processes, we need to take the whole environment into account, i.e. 'events of enviroining'. In a transactional perspective, this implies that every pupil in a class is in some way always included *and* excluded on a continuum of exclusion/inclusion. This rejection of an included–excluded dualism is in line with Dewey's transactional view of experience. Here, Dewey (1920/1986) uses experience to explain how people – in this case pupils – are both connected to and are part of the world. For Dewey,

the fact that people act on the consequences of their own and others' actions entails a close connection between what he calls doing and undergoing the consequences of our actions. In these processes, pupils with and without NDD and the events in the PE practice are continually transformed. Pupils in a PE class do not solely witness sealed subjects or objects bumping into each other, but instead participate in a myriad of *transactions* between an internal and external environment in which each is connected to the other in particular ways (Maivorsdotter and Andersson 2020). Just as individual organisms take the external environment into their internal beings through processes of breathing, eating or drinking, pupils take a particular PE practice into their orientations and habits (see Shilling 2018). In PE classes in which pupils with NDD are integrated, the PE practice is constituted by the pupils with NDD and their peers.

In this study, we try to unpack what the inclusion processes in PE look like, what the conditions of the PE class are in which inclusion and exclusion processes are present, and what kind of meanings the pupils in these classes make. By taking the dynamic relations between the pupils as a starting point (Garrison 2001), meaning is not to be found in the world itself or captured inside the pupils' heads, but is instead located in the PE practice in which a pupil is involved. Dewey (1922/1983, 16) further explains that '[a]ll virtues and vices are habits which incorporate objective forces'. Hence, inclusion and exclusion processes in PE can be understood as habits incorporating the conditions of the PE practice, bearing in mind that no habit can incorporate its entirety. This means that pupils need to discriminate and selectively attend to some feelings, interests and problems and disregard others. In a transactional perspective, habits are the tools with which pupils discriminate and coordinate the continuous flow of experiences into functional wholes (which can be observed over time in a number of lessons) (Garrison 2001). When taking part in a PE class, pupils consequently draw on resources to make sense of their situations.

As researchers, we are potentially able to capture PE practices in overt habits in a classroom situation in terms of pupils' efforts to inhabit spaces and make meaning of their experiences. Drawing on our observations of and interviews with pupils with NDD and their peers, we can accordingly shed some light on ongoing inclusion and exclusion processes. Contextualised in the PE class, we have identified these processes based on the pupils' own actions and experiences. By eliciting this enviroing *as an active process* (Andersson, Garrison, and Östman 2018), we ask the following analytical questions: (i) What are the pupils' experiences of integrated PE? (ii) How do these events appear as inclusive? (iii) How do they appear as exclusive?

Methodological choices

In Sweden, many pupils with NDD are organisationally integrated into mainstream classes in all school subjects, including PE. However, most schools do not have any explicit strategy for this integration (for detailed information about the Swedish context see Arnell, Jerlinder, and Lundqvist 2018; Jerlinder, Danermark, and Gill 2010; Klavina et al. 2014). Thus, our purposive sampling procedure is inspired by the criteria for 'an information-oriented selection of critical cases to achieve information that permits logical deductions' (Flyvbjerg 2006, 230). In our search for a fruitful environment in which to study inclusive education for pupils with NDD, a municipality in West Sweden that had received funding from the Swedish Authority for Special Education (SPSM) to work with the inclusion of pupils with NDD was identified and contacted and consent was given to conduct our study. However, already in our first meeting with the school principals they realised that they had worked with other subjects and teachers but had forgotten to include PE in their inclusion project. For PE, the integration was therefore only organisational.

Three PE classes in which pupils diagnosed with NDD were integrated were selected by the two principals and the PE teachers based on their knowledge of the study's aim. The 76 involved pupils were aged between 10 and 11 years. Three PE teachers and sometimes up to three teaching assistants (TA) were tasked to work closely with the NDD pupils during the PE lessons. The context was expected to provide us with a favourable environment for studying the processes of inclusion and

exclusion in a situation in which all pupils – those with NDD diagnoses and without – were taught together in mainstream PE.

Data generation

Data was generated through field observations and interviews with individual pupils, some with an NDD diagnosis and some without, over a period of 11 weeks. The pupils were 10–11 years of age and were initially dealt with at group level, regardless of their diagnoses, in order to avoid labelling (McMahon 2012). We knew that some of the pupils in each class had been diagnosed with NDD and that other pupils were being medically investigated for suspected NDD. However, the sampling for the interviews was based on observations of *events* (Garrison 2001) in the PE lessons.

Field observations

During the 9 observations of PE lessons (3 lessons × 90 min for each class), author 1, an experienced primary school teacher with experience of children with NDD, followed the lessons in the gym by making notes on an observation schedule about the events taking place and what the involved pupils were doing in them (see Table 1).

Table 1. Example from Field observation schedule.

Lesson content/activity	Events/actions	Didactic moments	Pupil descriptions
Couple dancing	- boy standing away from the large group observing them but not participating	- missed learning opportunity	Boy with red t-shirt and special haircut
Couple dancing	- 3 boys running into the equipment room	- no active participation, missed learning opportunity	Boy with red t-shirt, Boy with big white gym shoes, Boy with AC/DC-shirt

The events – identified as ‘didactic moments’ (for an in-depth discussion see Quennerstedt et al. 2014) – were marked as a way of sorting the observation notes. From the didactic moments, theme-cards for the interviews were produced with activity verbs (preliminary themes) from the observed lessons written on them. The themes were generated as events in which processes of inclusion and exclusion were noticeable. The themes in this step of the analysis were ball games, cooperation, dancing, showering and competition. The 5 theme-cards were used as support for the pupils during the individual interviews.

Individual interviews

The use of semi-structured, individual interviews is well established in research in the field (e.g. Fitzgerald and Stride 2012; Healy, Msetfi, and Gallagher 2013), where the purpose is to close in on pupils’ *experiences* and collect ‘thick descriptions’ (Geertz 1973). 13 interviews (plus one pilot interview for testing the theme-cards) were conducted with 4 girls and 9 boys shortly after the observations were concluded using the theme-cards generated from the didactic moments. The cards were used as scaffolding around the individual interviews and the pupils were asked to choose one theme at a time to talk about. In this way, the interviews revolved around the events identified in the observed lessons. The pupils were told that the interviewer could also pick a theme depending on how the interview was flowing. Some pupils were rather shy and needed more interaction from the interviewer (Lewis and Porter 2004; Rubin and Rubin 2011). In accordance with the recommendations for this age group (Livingstone and Sefton-Green 2016), the interviews were held in a small

room adjacent to the home classroom (about 30 mins/pupil). The interviews were recorded and transcribed verbatim. Altogether, the data consisted of 120 pages of field observation notes and individual interview transcripts.

Data analysis

All three co-authors (experienced in physical education, teaching, public health and children with NDD) first scrutinised the data in order to identify (trans)actions or descriptions of actions that indicated events relating to inclusion or exclusion processes in PE practice (see Quennerstedt, Öhman, and Öhman 2011). After this initial structuring of the data, the analysis continued by applying analytical questions that furthered the transactional perspective (Quennerstedt, Öhman, and Öhman 2011) (for an overview of the process see Table 2).

Table 2. Research analysis process.

METHODOLOGICAL TOOL	Field observations	Theme cards	Individual interviews	Analytical question I + Research question	Analytical question II and III
OUTCOME	Didactical moments. Sampling of respondents	Preliminary Events	Clusters of Events	Findings, Categories	Excerpts that exemplifies exclusion/inclusion processes

Based on the purpose of the study, the three analytical questions listed above were deliberated on and agreed in the research group using an abductive process between the theoretical perspective and the collected data (Goodyear, Kerner, and Quennerstedt 2019). Following the techniques for establishing quality and credibility using a deliberative strategy (as suggested by Goodyear, Kerner, and Quennerstedt 2019), each author individually analysed the data based on the three analytical questions. Our individual findings were then compared, and similarities and differences unravelled and deliberated. Here, all the co-authors had an opportunity to make judgements about different alternatives (Goodyear, Kerner, and Quennerstedt 2019). We then collectively returned to the transcripts for another close reading to confirm our analysis. This led to the identification of five clusters of events, which provided a foundation for the final steps: (1) prerequisites for education, (2) social interplay, (3) pupil preparation, (4) relations between pupil and activity, and (5) curriculum content. By returning to the purpose, i.e. to investigate (and thus describe) what PE practice becomes in classes in which pupils with NDD are integrated, we again used the techniques from the deliberative strategy and identified four main PE practices in which processes of inclusion and exclusion were prominent. These processes (to organise, to cooperate, to sweat and to win) are outlined as findings in the study.

Ethical considerations

The schools received general information about the study and the participating classes met author 1 during a PE lesson for more structured information and the sharing of letters of consent: one for caregivers and an adapted letter for pupils (Harcourt and Quennerstedt 2014). The questions from caregivers were answered by email and telephone throughout the project. Initial questions from pupils were responded to after handing out the letters, as well as during the span of the project. All the pupils were periodically reminded that they could withdraw from the process at any time. This responsive attitude towards pupils was a way of dealing with the inevitable imbalance of power relations that was likely to appear (Harcourt and Quennerstedt 2014). For this study, this was addressed in three ways. Firstly, author 1 (with < 10 years of teaching intermediate level classes) spent time in the school playground during the breaks to establish more non-authoritative

relations with the pupils. Secondly, respect was shown for scheduled activities and the pupils and subject teachers were asked when it would be appropriate to leave the classroom for a 30-minute interview. Thirdly, no questions were asked about health or diagnoses.

Findings

Four practices were identified in the study: (i) to organise, (ii) to cooperate, (iii) to sweat and (iv) to win. ‘To organise’ is a comprehensive practice and has teachers’ actions in the foreground. The other three practices are embedded in the practice ‘to organise’ and foreground pupils’ actions. In each practice, processes of inclusion and exclusion are described using excerpts from pupils’ voices as illustrations.

To organise

To organise involves processes of inclusion and exclusion and is about how PE is institutionally organised by the school and the teacher. Inclusive processes involve predictability for pupils with NDD and clear instructions, whereas exclusive processes involve organisation in large groups and not providing enough information.

In one event the pupils waited outside the building until the PE teacher unlocked the door to their gender separated changing rooms. Another door led into the gym and the pupils had to wait for the teacher to open that door when the lesson started. The whole setting seemed well structured and one boy summed up his experience by saying:

Boy “N”, 11 yrs. (NDD): We are always in the same gym so it doesn’t change much ... of course, you change (the lesson content) but it’s not ... it doesn’t change a lot, it’s pretty similar from time to time.

In the boys’ changing room a pictogram¹ attached to one of the wall hangers illustrated the processes of changing into gym clothes and showering. The PE teacher pointed to this and explained that Boy ‘N’ had difficulty concentrating and was easily distracted from the task in hand. This pictogram helped to remind him to complete the task without the PE teacher having to intervene. The pupil said:

Boy “N” 11 yrs. (NDD): But it doesn’t feel like nagging when they put this (pictogram) up and say “look here!” and then I’m thinking ‘ok, I guess I have to shower then’ ... so I get a little motivation (from it) and that is very important.

The pictogram presupposed that the pupils used the same changing room every time and that this pupil used the same spot and wall hanger.

In another event, PE was organised as co-education for two classes with two PE teachers and was somewhat chaotic. 4–5 pupils wandered around instead of sitting down and listening to the PE teacher giving instructions before the lesson activities started. When the lesson started, three pupils went to the equipment room and stayed there for the duration of the lesson. Two pupils sat on a bench on the sidelines. One of the PE teachers started the first activity, which was a warm-up game. The other teacher took charge of the music by turning it on and off so that the class could run and stop as instructed by the first teacher. After the warm-up all the pupils ran to the equipment area and threw their coloured bands on the floor. The three pupils waiting there were then encouraged by the teacher to sort the bands out and put them into separate metal rings. Most of the pupils actively participated in the lesson activities, although one group of boys did not.

All the interviewed pupils expressed negative experiences of the above lesson. Later we discovered that one boy never left the changing room. In the interview his friend retold the experience from the previous week:

Boy “A”, 11 yrs. (peer): I think it was better before when we were just our own class, because now it’s more like fighting and so ... a week ago it was ... then there were two who got into a fight with T and he started getting a

nosebleed and started to throw up and spit blood and so on ... after PE ... there was a lot of fighting then ... and some are not, very often some don't do PE, and many swear and fight all the time.

The fight mentioned in the excerpt was also used as an example when one of the teachers tried to describe the difficulties of teaching these two classes together. In an interview with Boy 'T', he talked about why he had stayed in the changing room:

Boy "T" 11 yrs. (NDD): No, I was very pissed off then ... and also when that happens, it's very hard to shut down ... until I'm thrown out and driven home or so sometimes ... but because they haven't learned they've been beaten up a couple of times, but they haven't learned that because every time I get angrier and finally they will have a bad bang and that is what they haven't learned that there is no point carrying on because I'm getting even more pissed off then ... but there haven't been any fights lately because we have not been in the same room and so ... and at dance, I don't usually do dancing.

I: ... this makes me a little more curious, don't you ever dance?

T: I don't dance a lot. It's just only ... I like ... I'm not all for dancing and such ... there is a disco and stuff ... I usually only buy stuff and sit and eat ... I don't usually do dancing ... I'm more interested in engines.

Boy 'T', who was diagnosed as having Autism and ADHD, described how he navigated the risk of getting into a fight if he entered the gym by remaining in the changing room. The outcome of the lesson for the six non-participating boys indicated that the process of including them in the described setting was not working.

In another event, the teacher went through the lesson planning on a small whiteboard. This was the only time the pupils were given any information about the lesson's activities. If the pupils did not understand the instructions they could ask questions, but not everyone was comfortable with that. One boy expressed the following experience:

I: What do you usually do before lesson starts?

Boy "J" 10 yrs. (peer): Teacher says: We are going to do "this". And those who can't understand when he says ... they say "I don't get it" ... but then everybody else says "but keep quiet then and you will get it!" ... but I still don't get it ... he doesn't explain ... he just says "we are going to do "this", and the idea is that "like this" and ... and I just say "What?"

I: Do you ask again then?

J: Nooo ... because I don't wanna.

Interviewer: But why?

J: I DON'T WANT TO (giggles)

Peer pressure when the pupils gathered to receive information about the lesson content prevented Boy 'J' from asking questions so that he fully understood the instructions.

To cooperate

To cooperate involves the complexity of planning for inclusive education. Some of the pupils were able to overcome feelings of doubt and resistance in relation to the lesson activities, while others remained in doubt. Inclusive and exclusive processes involve working well together, social support, resistance, not being on task, organisation and specific activities.

In one event the PE teacher had prepared a set of games in which the pupils were expected to work together to solve a physical task with a set of rules. The teacher divided the pupils into small groups of five and instructed each group in the set tasks. One pupil seemed to wander between the groups during the lesson. When asked why they believed that cooperation as a practice was used in PE, different experiences were expressed. One girl stated:

Girl “E”, 10 yrs. (peer): Because you practice to cooperate on different things ... because sometimes you HAVE TO cooperate and if you haven’t practised it will end up in a big ... wheeeo – chaos!

I: But why will there be chaos?

E: Because some people do things other than cooperate ... if you have practised you will know (what it takes).

I: So when you say other things ... that means?

E: Yeah, well, they talk or walk around instead of doing what it takes.

It was clear in the observations that the PE teacher had adapted these situations for one boy. The girl quoted above seemed to be the *tool* for the teacher’s adaptation, because she was always paired with the same boy.

I: Was it easy to hold somebody’s hand while running?

E, 11 yrs. (peer): Yes, it was actually.

I: Did you get someone you felt you wanted to hold hands with?

E: Yeah ... B is number 5 in the class and I am number 6 so it is always the TWO OF US that go together ... it’s always US ... so you can say that I am used to holding on to him ... but most peers don’t want to ... he is obviously a little ... mmm ... ”weird”.

The girl smiled when saying this. The boy described the same event as:

I: Do you remember how it felt to run together holding hands?

Boy N, 11 yrs. (NDD): It was easy. It felt easy because (we have done it before) when we do tag games and dodge-ball in pairs [...] I don’t know, but it feels like I have been with her very many times when we practise cooperation ... that is probably because it worked very well then.

This event seemed to support inclusion in PE for this particular pupil with NDD, although it also affected the girl who was chosen by the teacher to support him. The event illustrated that by offering possibilities to practise cooperation the PE teacher supported the processes that promoted the inclusion of the pupils with NDD.

Couple dancing was an activity that was used to practise cooperative skills. Moving together to the rhythm of the music and holding onto each other can however be very demanding. In one event at least one girl participated, even though she stated that she did not like dancing.

Girl “S”, 11 yrs. (peer): I loathe dancing. I never liked to dance and it makes it worse that I am not allowed to dance with a girl, with guys it’s just embarrassing and it’s more difficult ... [...] I feel safer dancing with girls because boys are so competitive.

I: Can you tell the teacher that you would rather dance with girls?

S: Yeah I’ve said it a couple of times ... everybody has ... but it’s couple dancing and you have to learn whether you like it or not ... [...] but every time I danced with a boy we left each other so I could dance with one of my (girl)friends instead and he with one of his friends.

I: Ah, so the girls don’t have to be “followers”?

S: No, I have been the “leader” ... we reckoned that boys wanted to be “leaders” and girls “followers”, but I’ve been “leader” almost all the time until I ended up with a boy who refused to be the “follower”.

This girl navigated some aspects of the cooperating event in terms of who to cooperate with without getting into trouble with the teachers. She seemed to reflect on her hesitation to dance with a boy and found a solution by leaving the boy for a girl, which supported a new habit of participating in the lesson activity of couple dancing, despite her feelings of awkwardness. At the same time, her action could be interpreted as exclusive by the person being dropped.

To sweat

Sweating is often part of physical activity and PE, and it is common for pupils to get sweaty and shower after a PE lesson. Working up a sweat involves taking an active part in the lesson activities. Sweating illustrates that there are expectations about how things should work out during, as well as before and after a PE lesson. Some of the pupils who do not accept these demands are listened to by the PE teachers, but others are not, which supports processes of inclusion or exclusion in PE.

Some pupils refused to change and shower together with the whole class and were therefore allowed to use a separate changing room. In the observed event, two girls made use of this opportunity. Consent was not given to interview these two girls, but one of their peers was irritated about the situation and complained that:

Girl “P”, 10 yrs. (peer): Y and R, they don’t even shower with us! They go to the teachers’ shower room.

I: Why do they do that?

P: I don’t know but they’ve been doing that all this year. They used to shower with us last year but then this year they stopped and now they shower in the teachers’ room. [...]

I: Is it ok that you can shower somewhere else if you want to?

P: My coaches always say that its GOOD if we shower together, because then we get to know each other better.

This girl was irritated because the two girls did not follow the same rules as those for her leisure time handball. The intended inclusive process of giving the two girls a separate changing room in this event thus became exclusive, because the reason for it was not explained to the other girls. However, it may have been regarded as inclusive if the perspectives of the two girls in the separate changing room had been taken into account.

A similar situation arose in another event when one boy described why he had changed and showered in a separate changing room from the rest of the class.

Boy “A” 11 yrs. (peer): Me and my friend T and another boy, we have a separate changing room because, well it’s a little special, I don’t want to show myself naked in front of people and so ... [...] when I was in year 1 or 2 I started to avoid showering with the other boys and they talked about strange things all the time ... so I had my own shower because of that ... and then T came along and then another one so now we are three boys in that separate changing room.

When interviewing one of their peers who showered together with the rest of the class, Boy ‘K’ expressed the following experience:

I: You know each other well in your class, right? But some have a separate changing room and shower, right?

Boy “K”, 11 yrs. (peer): Yeah, that’s right. There’s an immigrant and some other boys ... [...] I believe it has something to do with their religion.

In this event, it is clear that by giving these boys a separate room to support the inclusive process of participating in PE practice the teacher also risked peers seeing it as an exclusive practice.

To win

This practice consists of events that show the differences between how pupils experience competing in PE. At least in Sweden, it is customary for PE teachers to plan some kind of warm-up activity or game at the beginning of a lesson so that the pupils can start to move their bodies, raise their pulses, play and have fun together before going into the learning objectives of the lesson. These activities often involve aspects of competition. Most pupils seem to like this part of the lesson and find the element of friendly competition enjoyable and motivating. However, some of the pupils in our study explained that loud screaming and hard balls hitting their bodies made them lose motivation

and instead experience fear. To win accordingly illustrates that processes of inclusion and exclusion can emphasise the division between pupils who enjoy or hate competitive activities in PE.

In one event in our study the PE teacher described an adaptation that was intended to include those pupils who were not comfortable with ball games. The teacher explained that soft balls made of foam rubber were used instead of balls pumped with air, because the softer balls were a little slower and did not hurt as much when hitting the body. He also told some pupils to shoot with their non-dominant hand to minimise the impact of their shots on their peers. In the observed event this was mostly practised in Dodgeball, sometimes as a warm-up exercise and sometimes as a ‘treat’ that ended the lesson. One boy described his experience of Dodgeball like this:

Boy “U”, 10 yrs. (peer): [...] many in my class are afraid when two different peers have the ball.

I: Mm ... are you thinking about Dodgeball?

U: Yes like when you are supposed to hit each other (with the ball) ... when L and J have the ball ... you just wanna disappear from the field ... 'cause they ... sorry if I'm using foul language but ... they shoot the ball with a HELL OF a speed! And it REALLY HURTS!

I: Mm ... but why do they do that?

U: I think it's because you shouldn't have time to watch out.

Even though this boy experienced Dodgeball as fear and pain, he still participated. He also proudly described how quickly he could run and that on one occasion he was the ‘last pupil standing’ in the game. All the pupils participated in the activities in the event, but some conflicts occurred due to different conceptions about the aim of the activity.

In another event, a boy described his disappointment when the teacher paired him with someone who did not like competing:

Boy “D”, 10 yrs. (peer): [...] when it's a competition I'd rather be with those who don't just sit there saying “no, I don't wanna go” ... it's not fun ... you have to encourage each other!

I: So why do you think they say that?

D: Eh ... that it's really like they have to choose between a rock and a hard place ... they don't like it.

I: Why do you think that?

D: Because ... well I think they prefer to sit in front of computers.

Boy ‘D’ did not have an NDD diagnosis but was very competitive and was interviewed about the events he was involved in during the PE lessons. Several pupils said that competitive activities and competition seemed to cause conflicts and even fights amongst some pupils. One boy mentioned a game called thrash-ball and referred to the different rules that were applied in that game:

Boy “T”, 11 yrs. (NDD): ... well if you are playing e.g. thrash-ball, that is NOT a good game because I was in the same team as ... they were in it together ... and it turned out to a big CHAOS that game ... I think you should hold the stick normally, not upside-down because it gets too hard [...] and people got angry ... it was no good.

I: Did you also get angry?

T: Yeah ... but if it's normal floorball it can be fun, or badminton ... I prefer to compete in badminton because I have improved in it ... I am pretty good ... it's just my serves that suck ... but it's like that for everybody ... they lack good serves.

For Boy “T”, the following parameters were crucial for his active participation: 1. the kind of game being played (thrash-ball), 2. clear instructions about the rules and 3. who he was grouped with. The above event illustrates that several factors are interwoven in the category ‘to win’ and that exclusive processes are not just a matter of different experiences of competing. The kind of game (thrash-ball)

and his earlier experiences of an ongoing conflict with some of the boys in the co-educational class played a crucial role in this event. The group of boys were not even allowed to go to each other's playground areas during the breaks; something that the school principals had not considered when putting the two classes together in the PE practice. In this sense, the organisation, together with the competitive elements in PE, constituted an exclusion process in PE practice that the teachers and pupils were expected to manage.

Discussion

In this article, we have explored what PE becomes in classes where pupils with NDD are integrated. Based on this purpose, we have investigated inclusion and exclusion processes, and have done this from a pupil perspective by observing their actions during PE lessons and in follow-up interviews. In the practice of what PE in Sweden 'becomes', pupils without an NDD diagnosis, pupils with a diagnosis, and pupils with functional differences that fall within the framework of NDD but where a diagnosis is lacking, are all integrated. As a consequence, the entire group of pupils has been in focus for the study.

Our results reveal that practices such as 'organising', 'collaborating', 'sweating' and 'winning' are those in which inclusion and exclusion processes are particularly prominent. In all the practices, the actions consist of inclusion *and* exclusion in coexisting processes. For example, pupils with NDD may experience elements of competition as unpleasant, as an increased heart rate, or as stressful (see also Arnell, Jerlinder, and Lundqvist 2018; Lamb, Firbank, and Aldous 2016). A reduction in intensity and downplaying winning and losing during competitions can thus become inclusive for these students. However, this does not apply to all pupils with NDD, as they are a very heterogeneous group (Petrie, Devcich, and Fitzgerald 2018; Rekaa, Hanisch, and Ytterhus 2019). Experiencing the discomfort of a rapid heartbeat and competing can of course also apply to students without NDD, which means that an adjustment in the practice can be inclusive also for them. At the same time, a practice where competition is toned down can be experienced as exclusive for students who then regard an activity like ball games as meaningless. In line with Petrie, Devcich, and Fitzgerald (2018) and Rekaa, Hanisch, and Ytterhus (2019), our results accordingly show that there is no standard recipe for which actions or content in PE practice are inclusive or exclusive for pupils with NDD. Instead, we show that teaching PE inclusively for these pupils is complex, in that individual differences between pupils with NDD are sometimes as great as those between students without this diagnosis.

So, are there more general ways of designing teaching in PE that genuinely includes students with NDD in PE? By studying the actions of the entire group of pupils in the practice of PE we have identified some overall patterns. Regarding the issue of what PE becomes in classes in which pupils with NDD are integrated, our study shows that PE becomes a number of practices in which inclusion and exclusion occur, practices that have existed in the subject for a long time. Despite the fact that considerable research has been done on the inclusion of different groups of students and on the choice of content and methods, the content of PE does not seem to have changed very much (Fitzgerald and Stride 2012; Lamb, Firbank, and Aldous 2016; Maher 2018; Petrie, Devcich, and Fitzgerald 2018). As we see it, there seems to be a one-sided focus on *what* the teachers should teach and *how* the pupils should learn this sometimes taken for granted content. These questions are of course not insignificant for PE practice. However, to support increased inclusion for students with NDD, we, based on our results, would argue for a shift towards more of a focus on *how* teachers teach and *what* students should learn.

Asking the question of *how* teachers teach in order to promote an increased inclusion of students with NDD opens up for new analyses of inclusion. In our study, there are answers to the *how*-question in the form of results showing that teaching pupils in small groups would seem to be a much better way of equipping for inclusion than teaching in larger groups, even if large groups enable more teachers to be present. The results also show that communicating with and preparing pupils

for what will happen during the lesson is crucial for inclusion, i.e. communications between PE teachers and class teachers, between PE teachers and pupils, and between teachers and parents. If communication and preparation became a more central part of the inclusion strategy, PE teachers would be more likely to plan and prioritise their teaching in a more structured way and not teach in a way more as ‘capturing-the-moment’.

Regarding the question of *what* students learn, our study demonstrates that the pupils are mainly expected to participate in practices like working together, being physically active, sweating, competing and winning. What they are expected to learn is accordingly limited to the learning that results from participating in these practices. Hence, learning movement or movement culture in terms of investigating, inquiring, discovering, challenging or reflecting on different movement practices or ways of moving is not present in our data in relation to learning. If the content (what) is reduced to exclusively being about participating in more traditional sports activities, there is a definite risk that this will set limits for inclusion. Based on our study, we suggest further research into the questions of *how* teachers teach with regard to inclusion in classes in which students with NDD are integrated, as well as further studies on the question of *what* students learn. Further research on what inclusion means in PE is also crucial. Research by Magnússon (2019) has in this vein revealed that the definition of inclusion varies between different parties, and that there often are different views about inclusion within one and the same context. Does ‘being included’ mean being quiet and not disturbing the teaching (as we see to some degree in our study), or does it mean achieving learning objectives set out in PE for all pupils? It is thus important to make assumptions about inclusion explicit when teaching PE and as a consequence be clear about what PE becomes when pupils with NDD are integrated.

Conclusion

In this study we have shed light on the multiple variations of pupils’ needs and the span of actions that support, as well as challenge, inclusion for pupils with NDD in mainstream PE classes. Our findings are in line with those of Rekaa, Hanisch, and Ytterhus (2019) and Qi and Ha (2012), which highlight the complexity of inclusion in PE and that there is no single ‘recipe’ for success when it comes to integrating pupils with NDD. Nevertheless, our findings suggest that pupils with NDD and their peers seem to be aware of what inclusion and exclusion processes in PE look like. They can ‘decode’ and articulate these processes, which is good news for teachers. As it is clear from the results that both the organisation of PE practice and aspects of cooperation are crucial, we, in line with several other scholars in the field, would argue that inclusion is highly dependent on the pedagogy that is used. Teachers are thus imperative for continuously making judgements about what to teach and how. As Maher (2018) argues, teachers should also be knowledgeable about pupils with NDD in these judgements. This knowledge potentially puts pupils with NDD (i.e. what is sometimes invisible in PE practice) in the forefront. However, in order to do this, teachers also need more knowledge about pedagogies of inclusion and exclusion in general. Our advice is that on the one hand it is important to make ‘the invisible’ (i.e. pupils with less visible disabilities) visible in the PE pedagogy. On the other hand, when the invisible becomes visible in PE practice, for example through different adaptations or organisation in relation to pupils with different diagnoses, there is always a risk of singling out some pupils, which could potentially lead to stigmatisation and a different form of exclusion. So, when making something visible it is important to be aware of what PE practice becomes for *all* pupils. The problems and challenges with inclusion could thus be dealt with more at group level, and not be exclusively reduced to including ‘individual pupils with problems’. To achieve this, teachers, in line with Petrie, Devcich, and Fitzgerald (2018) advice, need to focus on educational curriculum design, developing pedagogies of inclusion, and an active and ongoing communication with pupils, colleagues and parents.

Note

1. Pictogram is an image-based language. The most common pictogram is the symbol for men's and women's toilets in public areas.

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