



Research paper

“Go beyond your own comfort zone and challenge yourself”: A comparison on the use of physically active learning in Norway, the Netherlands and the UK



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ARTICLE INFO

Article history:

Received 27 January 2022

Received in revised form

30 May 2022

Accepted 5 July 2022

Available online 14 July 2022

Keywords:

Physically active learning

School-based physical activity

Classroom-based physical activity

Pedagogy

Teacher agency

ABSTRACT

The adoption of physically active learning (PAL) in schools is becoming more widespread. To understand how PAL is being used in different countries and explore if and how methods and strategies differ, this paper draws cross-national comparisons in primary school teachers' use of PAL. Thirteen focus groups were conducted with 54 teachers from Norway, the Netherlands and the UK. Four themes were identified using thematic analysis: 1) teachers' values and beliefs about PAL; 2) influence of school context; 3) influence of the national policy context and; 4) managing teacher dissonance when using PAL. Use of PAL was related to teachers' values and beliefs and the degree to which these aligned with the context of the school and the wider educational system. The findings underline the importance of addressing teachers' competence, opportunity and agency to use PAL in different contexts.

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1. Background

Globally, school-aged children are not meeting international recommendations for physical activity (PA) (Aubert et al., 2018; Guthold et al., 2010). For example, an estimated 80.9% of youth (11–17 years) in Central and Eastern Europe do not reach the minimum recommendation of 60 min of daily moderate to vigorous PA (Guthold et al., 2020) and, furthermore, there is an attenuation of PA with age (Aubert et al., 2021). Moreover, there are well documented social inequalities in PA profiles among primary school-aged children in most countries, according to ethnicity,

gender, level of parental education, income and occupation, and disability (Musić Milanović et al., 2021). This means that children could be missing out on the triple benefits (e.g. today, into adulthood, and for the next generation) that such investments in their lifestyle could yield (van Sluijs et al., 2021). Efforts to increase children's PA levels, during the school day, have thus proliferated in recent years, with schools often being seen by policy makers and health promotion scholars and practitioners as 'ideal settings' for reaching all children regardless of social position (Anderssen, 2013). As Fitzpatrick and Tinning (2014) have argued, this reflects the ways in which schools are increasingly placed in a health and learning quandary, with respect to both instrumental and educational aims and purposes which teachers are required to make sense of (Fitzpatrick & Tinning, 2014). Classroom-based PA interventions, in particular, have expanded over the last decade

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among primary schools in several countries, the specific purpose of which has been to increase PA and/or decrease sitting-time during lessons beyond physical education. Strategies have included the introduction of movement or active breaks (e.g. Just Dance), classroom restructuring (e.g. by introducing standing desks) and curriculum-linked active breaks (e.g. TAKE 10!, International Life Sciences Institute Center for Health Promotion).

The focus of this paper is on primary school teachers' use of physically active learning (PAL), which has been described as the integration of movement within delivery of academic content (Daly-Smith et al., 2021). Thus, PAL is used to increase opportunities for PA in school during lessons without competing with curriculum learning time. Use of PAL aligns with other school-based initiatives such as the active schools model and other whole school approaches (Blom et al., 2017; Daly-Smith, Quarmby, Archbold, Corrigan, et al., 2020; McKay et al., 2014). The use of PAL in schools has gathered momentum given the accumulating evidence that there are small but beneficial pupil outcomes relating to health, cognition, academic performance and PA (Daly-Smith et al., 2018; Guirado et al., 2021; Infantes-Paniagua et al., 2021; Norris et al., 2020). Furthermore, policies mandating a minimum length of daily school-based PA (excluding physical education) are beginning to be adopted, for example, in England (Department of Health, 2016) and in Norway (Norwegian Ministry of Health and Care Services, 2020). While implementation of such policy reforms differs between countries (Coppinger et al., 2020) the use of strategies such as PAL appear to be supported at a policy level.

To date, the literature on teachers' perspectives of using PAL is limited to examining its implementation in the context of one country, for example Ireland (Martin et al., 2021) and Denmark (Knudsen et al., 2021) or in relation to a specific programme or intervention, for example EduMove (Dorling et al., 2021). Little is known about the complexities and challenges of connecting health and education in schools and how teachers make sense of these perhaps competing demands (Leahy & Simovska, 2017). To address this gap in the literature, this paper presents a cross-national qualitative comparison of teachers' use of PAL from countries participating in the ACTivate project.¹ Such a comparison has the potential to identify patterns in teachers' beliefs and values in relation to PAL and understand how such differences might be accounted for. This detailed insight can help researchers and practitioners to better understand and improve outcomes of PAL. Furthermore, cross-country comparisons are able to identify common and divergent themes that cannot be explored by single country case studies and can enhance the solidity and richness of research findings (Ritchie, Lewis, McNaughton Nicholls, Ormston., 2014), thus yielding important insights into the landscape of PAL across Europe. It also implies engaging in research that seeks to understand teachers' ideologies in differing cultural contexts and education systems and asking critical questions about often taken-for-granted assumptions about government mandates (Ball, 2003), in this case about PA in education. Therefore, the overall aim of this study was to compare teachers' use of PAL and identify common and unique practices. Specifically, we focus on exploring teachers' beliefs and values about PAL and how teachers (are able to) act on them within the school and classroom context. In so doing, we

identified the types of support teachers and schools may need if they are to use PAL more widely.

2. Methods

2.1. Design

A qualitative descriptive approach (Sandelowski, 2000) was used to facilitate the cross-country comparison and understand teachers' use of PAL. It was also chosen to facilitate the production of contextually rich data which allowed the diversity of experience associated with teachers' use of PAL to be understood. Specifically, semi-structured focus groups were used to explore teachers' use of PAL in practice, allowing aspects of use to be examined contextually whilst encouraging depth and quality of data associated with qualitative description designs (Colorafi & Evans, 2016).

2.2. Selection and recruitment

Purposive sampling (Sparkes & Smith, 2013) was used to recruit participants from the consortium countries. Primary school teachers were recruited from the research group's PAL network, to yield information-rich cases relating to the practice of PAL and ensure a range of teachers with different levels of PAL experience. Within Norway and the UK, teachers were recruited at the school level whereby potential schools known to be using PAL were identified. Within the Netherlands, individual teachers responded to an invitation to participate which was emailed to a distribution list from the national teacher council. Subsequently, teachers were contacted via an email describing the general purpose of the study and requesting the nomination of teachers to be invited to participate in a focus group.

Participants provided written informed consent and verbal assent prior to data collection and were reminded that their participation was voluntary and that they could withdraw from the study at any time without any negative consequences. Ethical approval was granted by Leeds Beckett University Ethics Committee and the Medical Ethics Review Committee of VU University Medical Center (2020.204).

2.3. Data collection

In total, thirteen semi-structured focus groups with 54 primary education teachers were conducted between October and December 2020. The sample comprised 16 male and 38 female teachers from three countries (Norway (n = 21), The Netherlands (n = 18) and the UK (n = 15) from 20 schools. Participants' teaching experience ranged from 1 to 25 years and they held a variety of roles, from senior management (e.g. Headteacher and Assistant Headteacher) to classroom teachers.

The focus groups were conducted with between three and six participants per group. Those conducted in the Netherlands (n = 5) and UK (n = 4) were held online due to COVID-19 restrictions in place at the time. Those in Norway (n = 4) were all conducted face-to-face in a private space within the teachers' respective school. All focus groups were moderated by at least one member of the project team from their respective country who was a native speaker. All moderators had received training in qualitative methods, and/or conducting focus groups specifically, and were experienced in qualitative data collection.

At the beginning of the focus group, teachers were provided with written information about the project, the aim of the study, anticipated duration of the focus group, and maintaining anonymity and confidentiality. A semi-structured interview guide was developed in English by the extended international research panel

¹ ACTivate (Activate Classroom Teachers) is an Erasmus funded Strategic Partnerships in Higher Education project (2019–2022), six-nation partnership (Western Norway University of Applied Sciences (Norway), Leeds Beckett University (UK), LIKES (Finland), The Mulier Institute (The Netherlands), University College Denmark, (Denmark) and University of Porto, (Portugal)). The main objective is to co-create, with teachers and other school stakeholders, an innovative European-wide open access PAL education programme, a PAL curriculum, a PAL web portal and a community of practice (www.activateyourclass.eu).

involved in the project based on their knowledge and expertise of PAL. The guide consisted of open-ended questions concerning teachers' practice and use of PAL and ensured that all focus groups included similar content (see [Appendix A](#)). The guide was subsequently translated into the relevant language, paying careful attention to the words and phrases to ensure the country specific contextual meaning of questions were maintained.

All focus groups were audio recorded and transcribed verbatim into Microsoft Word (Microsoft, Redmond, WA). The data were anonymised before the transcripts were checked against the recordings for accuracy. The focus groups lasted between 39 min and 80 min (with an average of 60 min).

3. Data analysis

Thematic analysis was used to analyse the data ([Braun & Clarke, 2006](#)). Thematic analysis facilitates the development of themes across data sets, which gives a systematic overview of the scope of the data allowing an exploration of their meaning within their particular context ([Ritchie et al., 2014](#)).

3.1. Familiarization with the data and open coding

Data from each country were initially analysed independently by the respective research team from that country and coded inductively using an open coding frame ([Williams & Moser, 2019](#)). First, the transcripts were read and reread in the native language to become familiar with the breadth and depth of content and to generate preliminary ideas and notes for coding. In addition, the first author translated all transcripts into English using Microsoft translator to ensure at least one author had familiarity with the whole dataset.

The debate regarding when in the research process textual data, in languages other than English, should be translated has been recognised ([Chapple & Ziebland, 2018](#)). A pragmatic decision was taken to code and analyse the transcripts in the first language of the country and translate excerpts of the data into English in the final stages of analysis, once the codes and themes had been agreed by the team. This was found to be an efficient way to combine understanding from three data sets and facilitate the cross-country analysis.

3.2. Generating cross-country themes

Initial thoughts relating to teachers' practice of PAL from each country were shared and discussed via an iterative consensus building approach ([Ward, 1987](#)). This required ongoing discussions via email and virtual meetings. Written versions of reflections and data summaries were also shared and used to identify differences and similarities between countries.

Consistent with [Braun and Clarke \(2006\)](#), analysis took a cyclical approach with several iterations before identifying and naming themes and subthemes from the data. Through a process of discussion and cross-checking against codes, the coding clusters were compared together and in relation to the entire data set before being grouped into overarching themes. The cultural meaning of the transcript excerpts was verified through discussion with members of the project team who moderated the respective focus group. The iterative process of repeated reading, reviewing, and refining of themes and subthemes, while considering the whole text, sought to ensure a credible representation of participants' voices and experience, commonly seen in qualitative descriptive studies ([Sandelowski, 2000](#)). An advantage of this process was that all authors were able to participate in every stage of the analysis whilst remaining close to the participants' intended meanings, and

it enabled triangulation whereby codes and themes could be checked for interpretations and understanding ([Patton, 1990](#)).

4. Results

Four themes were identified as a way of understanding teachers' use of PAL: 1) teachers' values and beliefs about PAL, 2) influence of school context, 3) influence of the national policy context and 4) managing teacher dissonance when using PAL ([Table 1](#)). The first three themes are related to understanding teachers' actions in context, while the fourth theme helps to make sense of understanding how teachers respond to their context by aligning their values and beliefs within the prevailing social, political, and educational norms of a specific country context. Each shall be explored in further detail below.

4.1. Teachers' values and beliefs about PAL

This theme was developed to capture the individual and collective discourses which informed teachers' views that underpinned their practice of PAL.

The use and appreciation of PAL as a vehicle for learning was common among teachers from all three countries. Descriptive discourses were used to express the relevance of PAL to perceived purposes of education. For example, there was agreement that PAL had the potential to lead to several positive pupil outcomes, including educational, which teachers felt justified their use of PAL. The most frequently mentioned outcome was pupil engagement, with PAL offering a different level and type of engagement which teachers felt could not be met to the same degree by more traditional pedagogical approaches. However, it was evident that teachers sought engagement for diverse purposes, and these varied between countries. For example, UK teachers predominantly spoke of using PAL to provide opportunities for pupils to be active and/or reduce their sedentary time:

For us the importance is getting these children physically active in whatever way that we can because you do see a lot of them have such sedentary lifestyles at home. Especially with the restrictions of COVID, you know some have come back, they're a totally different size, they're a totally different shape. And it's just about getting them up and moving again (Female teacher, UK Focus Group 1)

However, the benefit of PAL to pupils' health was secondary to the more socially focused values of teachers in Norway and, to a lesser extent, the Netherlands. For example, Norwegian teachers purposefully used PAL to foster co-operation and positive relations with and between their pupils. One Norwegian teacher reflected that this often manifested itself as changes within the classroom environment by promoting a different level of interaction:

It does something to the class environment and this affinity to those students who are always pushed into a group maybe, that they feel like they are part of the class (Female teacher, Norwegian Focus Group 2)

For Dutch teachers there was a belief that pupil engagement, expressed as pupils having fun during lessons, enriched learning and that the ability to meet a wide spectrum of learning outcomes using PAL to reach pupils was the primary reason for its use.

Within the narrative discourses recounting experiences of using PAL, there was some variation between countries in terms of how PAL was discussed and described and how it was used in practice. UK teachers described using PAL to add variety to their teaching

Table 1
Summary of generated themes.

Theme	Subthemes
Teachers' values and beliefs about PAL	Types of PAL Positive pupil outcomes Positive teaching outcomes Barriers to PAL Valuing the whole child Intrinsically motivated to use PAL Evidence-based practice
Influence of the school context	Physical environment Teacher empowerment Organisational culture of the school Supportive peers and colleagues Champion for PAL
Influence of the national policy context	Traditional norms Influence of education policy on PAL Performativity
Managing teacher dissonance when using PAL	Needing resources and guidance for PAL Measuring outcomes of PAL Legitimacy of PAL Conforming teachers Judgement from external agencies

practice and facilitate pupils' readiness for learning, with PAL being described as: *"improving their stamina for learning"* (Male head-teacher, UK Focus Group 4), and promoting resilience to take on learning challenges and persist through setbacks. However, UK teachers often relied on the use of active breaks to introduce movement in the classroom as an aid to re-setting attention:

When you can see a lesson falling flat it's one of the first things we probably reach for, is right, everybody stand up, turn round, sit back down, you know even just something as simple as that, just to grab their attention again. It does keep them focused (Male teacher, UK Focus Group 1)

Similarly, the UK teachers often discussed PAL in practical terms, for example, in relation to the structure and format of the lesson and the implications of using PAL on behaviour management and classroom control; both were frequently mentioned and often described as barriers to PAL, as one teacher reflected: *"Because you're outside, that safety of those four walls have gone so anything could happen"* (Male teacher, UK Focus Group 4).

Dutch teachers used expository discourse when discussing and defining different types of PAL and explicitly spoke of a sense of disconnect between teachers' understanding of PAL and its use among the profession more broadly. They believed that greater clarity and a consensus on the distinction between PAL and PA would help to promote the value and use of PAL as a pedagogical tool, which would make it more attractive for colleagues and wider stakeholders. Associated with this was their awareness of the limited but emerging evidence base of the proven effects of PAL on learning outcomes. However, there was agreement that there was an optimum balance between movement and learning, if positive outcomes were to be achieved; I would like to do it more often, because I do notice that the children really like it. Sometimes I find it difficult, because at some point you get to the limit of when they are still working, and when they just get active and are no longer working and are only being physically active. I notice I sometimes find that boundary difficult. (Female teacher, Dutch Focus Group 3)

PAL was conceptualised in a more holistic way by the Norwegian teachers who spoke of their role as educators in terms of nourishing and developing the whole child, considering mental, physical, and social factors. The idea of a connection between a pupil's body and mind, in relation to learning, was emphasized as being central to

the educational experience, with a state of wellness described as a prerequisite for learning which PAL facilitated:

You don't learn anything if you're not well at school, and you thrive and have friends. Then you won't learn anything. And that's what we've been talking about with the learning environment that we're emphasizing now at the beginning. Getting to know each other, and to be safe, and to have good relationships, and to thrive at school (Male teacher, Norwegian Focus Group 1).

PAL was frequently described as organic and emerging out of the classroom context, in a way which did not suggest a reliance on planning or preparation but rather as being based on teachers' judgement about when it would be most suitable to use. As such, it was described as flexible where movement was used to create variations in learning opportunities and promote interactive participatory methods without which, the holistic outcomes from PAL: *"may be a little diluted"* (Male teacher, Norwegian Focus Group 1).

Furthermore, the Norwegian teachers expressed a belief that their intention for using PAL was to facilitate a learning experience through the physical, thereby promoting a desire in pupils to understand a topic or problem by internalising it. Teachers were in agreement that the perception and use of PAL in this way lends itself to learning being embodied, which strengthens pupils' connection between the experience and the content, thereby helping to make it 'sticky'; Go out and experience with your body and soul and head and then go back inside to work on it and that's what PAL does (Female teacher, Norwegian Focus Group 3).

As such, pupils were described by the Norwegian teachers as co-creators of the learning experience where their connection with, and interpretation of, the topic (via movement) was the mechanism by which PAL contributes and adds value to their learning. In this sense, PAL was believed to foster a deeper type of learning by connecting both the body and the mind, but also by building stronger relationships between teachers and pupils whereby education was perceived as a shared endeavor where teaching and learning were done *with* pupils as opposed to being done *to* them.

Across all countries teachers felt that use of PAL required practice. Teachers believed that not everyone would be able to embrace PAL as easily as others, as for some, this required them to: *"go beyond your own comfort zone and challenge yourself"* (Female

teacher, Norwegian Focus Group 2). However, spending time developing confidence and competence in using PAL was seen as an investment that was repaid in terms of the benefits to both teachers and pupils, as one teacher explained: *“even if you let go of your plans, you’ll get something back for it later”* (Male teacher, Norwegian Focus Group 1). Indeed, there was recognition that this may come more easily to more experienced teachers who had the benefit of drawing on a larger repertoire of knowledge and skills to adapt accordingly. One teacher stated that *“with experience you dare to be more flexible”* (Female teacher, Norwegian Focus Group 1).

4.2. Influence of school context to use of PAL

This theme was developed to describe aspects of the school system that, either individually or collectively influenced teachers' use of PAL. There was a firm belief across all three countries that school senior leadership support (e.g., commitment from headteachers and governors) was essential for the sustained use of PAL. In particular, teachers identified an ethos driven by senior leadership, such as the adoption of a whole school approach to the use of PAL, as especially important because it avoided PAL being seen as an 'add-on' or a 'fad', as one teacher described: *“anything that isn't a focus, sometimes things begin to slip a little bit”* (Male teacher, UK Focus Group 2).

While senior leaders within the school were identified as being integral to the strategic use of PAL, its introduction often originated from there being a teacher within the school who had an interest in it and/or some previous exposure to PAL continuous professional development, resources or training either directly or via a colleague in another school. Indeed, teacher peer support and a cohesive approach to the use of PAL by teaching teams were identified across all three countries as elements which were important for its use; *So that is what I want here at school at least, that I become a sort of ambassador for PAL, in order to get my colleagues more involved.* (Female teacher, Dutch Focus Group 5).

For example, the opportunity to observe others delivering PAL was mentioned as a valued learning opportunity that allowed teachers the space and freedom to engage and critically reflect on their own practice. This process of teacher development was viewed as being as important as pupil outcomes from PAL.

Interestingly, this enthusiasm for more widespread use of PAL was also met with a note of caution from the Dutch teachers with some expressing that they were conscious of not using PAL in case it created too much noise or a distraction to other teachers and classes that were in close proximity. In contrast, the Norwegian teachers did not view the potential 'contamination effect' as a barrier but rather as a benefit of using PAL recognising that its visibility inside and outside the school was useful in helping to stimulate interest and raise expectations both among other teachers and pupils; *It's kind of noticed that there are more people doing it. It's not just us. I think that it helps make it not embarrassing because they even do it in the tenth* (Female teacher, Norwegian Focus Group 2)

The use of PAL outdoors was only spoken about by teachers from one focus group in the UK whose use of PAL was limited to indoors and who felt restricted by inadequate school facilities to accommodate use of the outdoor space in all weathers. Similarly, teachers also spoke about traditional classroom arrangements (e.g. having desks laid out in rows) limiting movement around the classroom and furniture needing to be moved to accommodate more active forms of PAL. Furthermore, these norms were reinforced by parents who were perceived to associate effective learning with the prerequisite of children being sat down:

For parents, you know, they are good learners if being sat in front of a desk, so I think you might get a bit of scepticism from parents (Male teacher, UK Focus Group 1).

Other examples of school norms and values were provided by the UK teachers who shared that they were permitted to wear active dress to school, something which one teacher believed was beneficial in allowing him to role model PA to pupils and increase the likelihood of him using PAL; *And clothing sounds like such a silly little thing, but if you're in your P.E. kit all day as an adult then you're ready to do it at any point throughout the day* (Male teacher, UK Focus Group 1).

It was evident that the teachers across the three countries had varying levels of experience of using PAL. However, there was agreement that PAL is dynamic and that its effective use requires a growth mindset and a willingness to practice, reflect and embrace challenges. Among the Norwegian teachers this was believed to be facilitated by the organisational culture within the school where teachers felt supported to use PAL and thus relied on their judgements and relationships with pupils to develop their practice. This level of self-reflection was something that some UK teachers had not experienced before using PAL; *I mean I must admit, to be fair, to start with I was saying how long I'd been teaching, you get quite set in your ways, for me that was quite a game changer. But I think you know if there's slow steps towards it, then you can see the benefits of it, definitely* (Female teacher, UK Focus Group 3).

4.3. Influence of the national policy context

This theme was developed to describe aspects of how the national policy context shaped teachers' use of PAL. Teachers across all three countries referred to the influence of the country's national policies on school priorities and their professional practices. For example, the promotion of standardised testing and inspection within the educational system created pressure on teachers who were held to account for their pupils' progress and the meeting of academic targets. This was spoken of in strong terms, as one teacher described: *“it's not made easy by the government”* (Female teacher, Dutch Focus Group 1).

The need to demonstrate pupils' progress and that learning outcomes were being met through PAL was a challenge, because the methods for assessing learning outcomes were not perceived to be well understood or developed. Consequently, they felt unable to use PAL in a meaningful way that met the needs and expectations set by the government, but accepted that this may be a consequence of teaching practice and educational policy operating at different speeds:

I think that if you're going to wait until it comes from very high, all the way back to the government and [school] system, you can wait a long time. I guess by that time I will be counting down for my retirement (Female teacher, Dutch Focus Group 1).

Similarly, UK teachers referred to priority in school being given to the things that were measured and inspected by OFSTED (the department in the UK responsible for inspecting educational institutions). This top-down approach to policy implementation was subsequently reflected at the school level; *We had OFSTED this year. Did they look at PE – no. Did they look at any part of it, were they concerned whether children are active in lessons, not at all. You know they are concerned with behaviour, the progression of learning, that's what they are concerned with, and then coz they are concerned with that, that's what you're concerned with as a leader. If the leaders of the*

school are concerned with that, that's what their teachers are concerned with (Male teacher, UK Focus Group 2).

Although financial support was not perceived as a necessity to facilitate PAL, the UK teachers also spoke of the opportunity associated with funding available to support school PA as part of the UK's Childhood Obesity Strategy (Department of Health, 2016). It was thought that this might influence teachers in some schools, particularly those new to PAL or those which had previously been reluctant, to try it.

I mean a lot of schools at the moment will have more money for Sports Premium [government funding to support physical education, school sport and physical activity] than they've ever had, you know from last year [due to Covid], so actually now is the time (Male teacher, UK Focus Group 4).

The Norwegian teachers also referred to the influence of the national revised curricula on practice, specifically, its focus on the 'social person', as one teacher described: *"It's been there the whole time, but it's been very clear now [in the revised curricula]"* (Male teacher, Norwegian Focus Group 1). It was felt that this not only reinforced their use of PAL but promoted teacher autonomy to ensure that every pupil can learn in a way that provides a mastery experience. For many, this was associated with the use of PAL outdoors, with the change in environment facilitating a dynamic which allowed individual pupils to be seen in a different light; *"They experience mastery of being outside, because then they can climb, then they can jump or run fast or whatever, so then back to that maybe you create more people who feel like they are mastering being in a community. That there won't be so many people who are called school losers"* (Male teacher, Norwegian Focus Group 2).

4.4. Managing teacher dissonance when using PAL

This theme was developed to help capture teachers' feelings of tension or conflict about using PAL. Such feelings arose when their desire to use PAL conflicted with the prevailing norms of their profession, their school, or the wider educational policy context of the country. Navigating this terrain was an issue for teachers.

Across all three countries, teachers were aware that whilst they were familiar with PAL and believed that it enriched learning experiences, it also challenged traditional teaching norms and was therefore considered by some teachers as 'risky' in terms of its capability to meet learning outcomes. This was particularly evident among the Dutch teachers who reflected that they did not use PAL as frequently as they might due to questions around its legitimacy as a teaching strategy that was valued by both the school and the Dutch Inspectorate; *As teacher I did think for a long time, and for a long time did not say that I was doing so much PAL, because I really had the idea sometimes that I was doing something that wasn't actually okay* (Female teacher, Dutch Focus Group 1).

There was also a perception among the Dutch teachers that there was a particular way PAL should be used, with teachers expressing a need for reassurance and guidance as to what would be effective. Subsequently, they identified the need for principles to support PAL alongside accessible and practical resources to support their translation into practice, rather than a self-reliance to create materials and plans. Furthermore, Dutch teachers expressed a type of discord, in that their *"experimentation with PAL"* (Female teacher Dutch Focus Group 1) felt unjustified because they had insufficient scientific evidence, acknowledged by educational bodies like the Ministry of Education, to support its use. This was especially the case with regard to those to whom they were accountable and who were prioritising learning, however beneficial the movement opportunity may be; *If it [PAL] does not have an effect on learning, I*

would rather just spend that time on a normal lesson and spend a quarter or half an hour longer on outdoor play or physical education or whatever (Female teacher, Dutch Focus Group 2).

In comparison, the outcomes of PAL were viewed in a more holistic way by the Norwegian teachers, rather than compartmentalised by subject area or lesson. Thus, PAL was described as a tool which could be used to invest in the child with the knowledge that gains would be made, even if this was not always in terms of their learning. Furthermore, diversity in terms of an individual teacher's approach to teaching associated with PAL was embraced by the Norwegian teachers. This was seen as desirable and beneficial to teaching practice to promote teachers' exploration and curiosity when using PAL; *But that's what makes the teaching profession so exciting, that I can't just turn the pile around and start over. I don't think I would have endured over 20 years as a teacher if it was just about working on the same thing and just doing it all over again* (Male teacher, Norwegian Focus Group 1).

There was a deep-seated commitment among Norwegian teachers to use PAL to help pupils realise their potential in a way which would add value to all aspects of their learning. Therefore, rather than experiencing dissonance, the use of PAL was perceived as part of the fabric of being a teacher, rather than a need or an attempt to conform to a school regime.

The alignment of teacher and school priorities was particularly important for Dutch teachers, who frequently mentioned pressure to conform and a focus on achieving educational outcomes so that they were seen as a successful school, particularly in the eyes of the Dutch Inspectorate. Without the approval of PAL from all levels of the educational system, some teachers felt less comfortable and justified in using it and were more likely to conform to school norms as a result. However, unlike the Dutch teachers, the UK teachers referred to feeling entrusted by their leadership teams to be able to test, reflect and learn from their experiences of using PAL. This included setting behavioural expectations, particularly when transitioning between tasks, as one teacher explained: *"There's been some trial and error where sometimes it's gone wrong."* (Male teacher, UK Focus Group 1). Likewise, Norwegian teachers shared that failure (and freedom to do so), was part of the learning process of using PAL and that doing so was analogous to fulfilling their responsibilities of being a teacher: *"It is part of trying to fail; we must fail"* (Male teacher, Norwegian Focus Group 3).

5. Discussion

This study aimed to draw comparisons in teachers' use of PAL from three European countries (Norway, the Netherlands and the UK) in relation to teachers' use of PAL, how PAL was valued, and understand how common and unique practices relating to PAL were shaped by various contexts.

Teachers' use of PAL centred around the anticipated positive outcomes from this type of approach. This finding is consistent with previous studies which have examined teachers' use of PAL. For example, positive student outcomes and pupil enjoyment have previously been identified as being related to teachers' use of PAL (Lerum et al., 2021; McMullen et al., 2016; Quarmby et al., 2019). However, the use of PAL varied between countries and was shaped by teachers' professional values and beliefs and the degree to which these aligned with and were supported by both the context of the school and the national policy context. For Dutch teachers in particular, this generated a sense of dissonance when using PAL in a system which constrained rather than supported their practice.

To our knowledge only one study, conducted in Denmark, has previously been published which examines teachers' values and

motivation for using classroom based activity (Knudsen et al., 2021). It found that teacher autonomy was deemed essential for the Danish teachers to act with volition in relation to PAL. The Danish teachers reported that they felt free and able to choose to use PAL, partly because there was no accountability or limitations imposed by the schools' senior management teams. Within our study, teacher agency was also found to be a key factor related to teachers' use of PAL. The concept of teacher agency has emerged in recent literature as an alternative means of understanding how teachers might enact practice and engage with policy (Biesta et al., 2015; Cong-Lem, 2021). However, rather than an absence of accountability, the Norwegian and UK teachers in our study were enabled and supported by a school culture that fostered trust and empowered teachers to act and use PAL in a way which they believed best suited their pupils. The Norwegian teachers stood out as using collective working by drawing on each other's expertise and experience, to legitimise practices and develop reflective practice across teams. In contrast, teacher agency was felt to be constrained among the Dutch teachers who conformed to the curriculum and demands of accountability defined by the state, but circumnavigated these pressures to find opportunities to 'experiment' with PAL (Ball, 2003). The contradictions between school priorities, teachers' values and knowledge created dissonance among the Dutch teachers. Teachers with more experience of PAL, as in Norway, were better positioned to use PAL through their own agency (Biesta et al., 2015). This accounts for some of the differences seen in PAL practices between the three countries. Thus, our study is one of the first to provide deeper insight into the influence of culture and context on teachers' use of PAL.

It has been suggested that the implementation of any school-based initiative is dependent on the extent to which teachers are willing to adapt or change their practice (Beets et al., 2008). However, our findings suggest that this somewhat over-simplifies teachers' use of PAL and in so doing obscures the complexity of facilitating teacher agency to use PAL. Within our study, teachers' use of PAL was related to several interconnected processes at the individual, professional, school and country level (Scanlon et al., 2021). In other words, teacher agency was shaped by context at multiple levels. For example, teachers perceived that it was important to know that the practice of PAL was evidence-based. However, awareness of the evidence was unlikely to be sufficient to support the use of PAL if teachers also perceived that they were not supported by the school's culture. It transpires that teachers' discretion to use PAL did not always align with feelings of teacher agency and capacity to use it. Rather than a willingness to adapt or change practice, based on our findings we would argue that if the use of PAL is to be supported, there is a need to consider an individual's context and the degree to which it may constrain and/or enable forms of teacher agency to elevate practice in an informed way (Lennert da Silva & Mølsted, 2020).

The influence of policy reform on teachers' use of PAL was most evident among UK teachers, whose focus on promoting PA and health provided a rationale for them to use PAL. This was perceived by some teachers as being innovative given the limited use of PAL within the UK. However, it was evident that teachers were yet to develop a strong philosophy to support their practice of PAL, predominantly relying on the use of active breaks. Thus, their understanding of PAL and how to facilitate learning whilst moving was limited. For example, among the UK teachers, moving and learning were often talked about as two separate processes rather than part of the same outcome. This implies an indirect interpretation of PAL, with PAL being used in support of the learning process but not integrated for learning. Conversely, the Norwegian teachers referred to PAL where learning was embodied, strengthening pupils' connection between the content and the experience

suggesting a stronger, direct interpretation of PAL which helped PAL to become embedded within their practice. This contrast in teachers' perceptions of PAL could also be said to be reflective of the differentiation of outcomes relating to PAL which were discussed. The UK teachers mentioned the short term aims of acquisition of knowledge versus the longer-term aspirations referred to, by the Norwegian teachers, as holistic child development. If the practice of PAL is to be supported and used more widely, research suggests a clear teaching philosophy is needed, without which the potential of PAL may never be fully realised (Nelson et al., 2015). Based on our findings we would suggest that a desirable approach to PAL is one which not only considers the context of the country within which the teacher practises but is also informed by progressive practice from other country contexts.

5.1. Implications for future research, practice and policy

The findings from this study highlight the need to understand teachers' values, beliefs and agency in relation to different local and national contexts, which directly and indirectly constrain them. Teacher agency is underpinned by values and beliefs that individual teachers bring to their practice based on their personal and professional socialization (Priestley et al., 2015). However, if it is to be sustained, it also requires collaborative development and learning. Therefore developing communities of practice appears to be particularly relevant for PAL, to move beyond the 'honeymoon' period of implementation to embedded practise (Goodyear & Casey, 2015). Establishing national peer networks of practitioners could facilitate the sharing of knowledge and critical reflection among practitioners to develop the field further. In particular, the relevance of different cultural contexts and education systems across countries, especially those that have been at the forefront of implementing PAL (for example, Norway) could be valuable.

Our findings also suggest that if PAL is to become embedded within a school, akin to a whole school approach, then it may best be viewed at an organisational and national policy level. For example, the introduction of pre-service education for trainee teachers in PAL may support change in teacher practice for those who are new to it and promote an embedded approach to PAL (Bruijns et al., 2022; Lander et al., 2020). Furthermore, this might not only facilitate a more positive pupil experience and outcome, but also individual and organisational change in a sustainable way. Finally, this paper serves as a departure point for future research to consider the influence of political landscapes of different countries and how they may support or constrain teaching and learning strategies or practices which serve to cross and/or connect the health education nexus (Leahy & Simovska, 2017).

5.2. Strengths and limitations

This is the first study to provide a cross-country comparison of teachers' use of PAL. Such comparisons are both time consuming and resource intense. However, it has enabled the exploration of common patterns and important differences between countries that can enhance our understanding of the contextual influences on teachers' use of PAL.

The purposive recruitment of schools and teachers may have resulted in recruiting schools and teachers more likely to have had positive experiences with using PAL. However, within the sample of participants, there was wide variation in both length of teaching experience and experience of practice with PAL and several factors at multiple levels were identified which influenced teachers' use of PAL, other than those operating at the school or organisational level (e.g. perceived judgment from external agencies).

Conducting research in teachers' native language offers the best

opportunity to capture credible, trustworthy, reliable and valid results reflective of their experiences (Lincoln & Guba, 2000). Each researcher was responsible for gathering data and contributing to the interpretation of data from their own context. It is acknowledged that language is culturally embedded, and different members of the project group may have interpreted and understood concepts differently. In addition, the use of multiple analysts could be argued to impact the rigour of the data analysis. However, working in a collaborative way, with cross-team discussion and reflexive dialogue, enabled the research team to manage interpretive subjectivities in the interpretation of the data. Furthermore, we would argue that this also presented a useful opportunity for analyst triangulation whereby codes and themes were independently checked, interrogated, and grouped to build shared understandings of the ideas and patterns represented in the data (Patton, 2015).

6. Conclusion

The results of this study suggest that teachers' use of PAL is shaped by processes both within and beyond the schools. Indeed, national educational policy is important for setting the organisational culture of schools and, the extent to which teachers can use PAL in any given situation is governed by the degree of agency afforded by the national educational system and the organisational context of the school. In part, this is reflective of the fact that schools are complex and adaptive social systems set within even more complex systems (Chalkley et al., 2018), which seem to limit and/or increase teacher agency to use PAL in different ways. The extent to which this applies to the teachers from each of the countries varied, thus demonstrating the value of conducting cross-country comparisons to understand the diversity of PAL.

Declaration of conflicting interest

The authors declare that there is no conflict of interest.

Funding

The authors of this manuscript were supported and funded by the European Union ERASMUS + Strategic Partnership Fund as part of the Activating Classroom Teachers project, ACTivate (Grant no 2019-1-N001-KA203-063024). The funders had no role in the study design, data, analysis and interpretation or preparation of the manuscript.

Acknowledgements

The authors would like to express their thanks to the teachers and schools who participated in this study as well as Dr Jade Lynne Morris and Øystein Lerum who contributed in the early phase of data collection and planning, as well as the extended ACTivate consortium of partners who facilitated recruitment and data collection.

Appendix A. : Focus group guide

Part 1: Introduction.

Can you all tell me a bit about your background as a teacher? (name, subjects you teach).

Part 2: Previous experience with physical activity in teaching & new approaches.

If some of you are using physical activity in your teaching, can you tell us about your experiences?

Can you think about a time when you have created a new type of approach or activity for your class to help improve something ... What was this?

What were you looking to "achieve" with the new approach or activity?

Did this approach/activity work? And if so, how?

Part 3: Introducing PAL.

Introduce PAL to and show standardised examples of PAL. PAL has been described as the integration of movement and learning during lessons time.

Part 4: Motivation with PAL.

Considering the examples of PAL provided and the "definition" referred to, what would you need to see from using PAL regularly in your classroom; (1) after one or couple of lessons and (2) over the school term/year?

Part 5: Outcomes with PAL.

Research indicates that some children learn better when they engage in physical activity in class, what are your views on that?

In your view, how & why do the PA in X, Y and Z "help" children learn?

Some research also indicates that physical activity in lessons may improve students' health (physical and mental health), what are your views on that?

Part 6: Wider Stakeholders.

Following on from your discussion, if the success of PAL is based on X, Y, and Z, how might other stakeholders in the school environment (e.g., your senior leaders, parents) understand the success of using PAL?

Would this be the same as you?

If not, how do you think they might view or want to see PAL success?

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