Understanding the management challenges associated with the implementation of the Physically Active Teaching & Learning (PATL) Pedagogy: A Case study of three Isle of Wight Primary Schools

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Abstract

Enabled partly by government policies by the Department for Culture Media and Sport, some schools are beginning to shift towards promoting a physical activity culture which complements the traditional PE and school sports provision. For many, this entails using physical activity as modality to promote academic performance. Physically Active Teaching and Learning (PATL) is one approach which has been adopted by schools on the Isle of Wight (UK) as part of a holistic island-wide intervention aimed at increasing pupil's educational attainment, health and wellbeing. To gain an in-depth understanding of PATL and examine the management implications of its implementation, this paper draws on qualitative data collected from three primary schools on the Isle of Wight. Overall, the paper supports PATL pedagogies as a holistic and joined-up policy response however, critical conversations are crucial for unravelling and unlocking collaborative solutions when discussing physical activity in schools.

Key words: Physical activity, active learning, management, education

Word count: 6802 words

Introduction

The last decade has seen an exponential increase in the number of school-based interventions utilising the relationship between physical activity and academic performance. Examples of such programmes include Maths of the Day, BBC super-movers, Premier League Primary Stars and EduMove (UK), Active Smarter Kids (Norway), Take 10! and Physical Activity Across the Curriculum and Energizer! (USA). In the UK, such interventions have been collectively called Physically Active Teaching and Learning (PATL), Physically Active Learning (PAL) or Physically Active Education. These methodologies innovatively utilise physical activity to promote academic performance, health and psychosocial wellbeing (Kibbe et al, 2011; Tomporowski et al, 2011). Delk et al (2014), Babey et al., (2014) and more recently Mwaanga and Moss (2018) have contended that such programmes are feasible, cost effective, sustainable and scalable and are consistently shown to have an increase on physical activity levels when part of school wide initiatives (Erwin et al, 2011; Holt et al, 2013).

Overall, there is good political will to consider interventions such as PATL in the midst of global concerns of physical *inactivity* that have become culturally imbedded and normalized. This has resulted in high prevalence of lifestyle-related non-communicable diseases and an unsustainable economic burden on national health services. It is probable that school leaders who are under constant pressure to get more children to achieve high grades in core curriculum subjects such as maths and science will consider interventions that promise to reduce sedentary curriculum learning while increasing academic performance. However, the perception held by some teachers is that physical education and sport is competing with other curriculum subjects such as maths, English and science for curriculum time, where physical education lessons are often replaced with revision lessons during examination periods. Hence, it is expected that school leaders will require proof of the potential effect of PATL on academic performance before schools adopt such approaches (Greico et al, 2016; Ward et al, 2006). The increase in PATL interventions has also attracted research that aims to examine the positive relationship between physical activity and increased academic outcomes (Donnelly et al, 2016). Within the UK context and globally, the current policy climate has favoured such interventions and research. For example, the WHO advocates the increase in physical activity (not only sport and exercise) and embedding physical activity into public institutions. However, despite the increase in the number of programmes and interventions which combine physical activity with academic subjects, there has been a lack of research

which examines the efficacy and implications of such programmes in the school environment.

The overall purpose of this paper is to understand how teachers negotiate and manage the delivery of PATL within the complex dynamics of the school environment. The primary objective is to investigate the management issues associated with the implementation of PATL programmes. In trying to understand how it is managed, it is imperative to ascertain the perceptions of PATL pedagogy. The primary data in the study was collected from teachers across three primary schools on the Isle of Wight who have implemented the PATL pedagogy as part of an Island-wide programme.

Overview of the relationship between physical activity and education

There is increasing evidence relating to the possible link between physical activity and academic performance. This includes executive function, cognitive processes, including memory, attention span and reasoning, all of which are necessary for goal-directed cognition and improved behavior (Donnelly et al, 2016; Tomporowski et al, 2011; Best, 2010; Chaddock et al, 2011). The evidence on the effectiveness of physical activity to develop cognition and academic achievement is favourable but also tentative (Donnelly et al, 2016; Erickson, Erickson et al, 2015; Gomez-Pinilla & Hillman 2013; Sibley and Etnier 2003). The work of Donnelly et al (2016) helps to provide some clarity from the available science and through a comprehensive systematic review of peer reviewed journals, predominately from the United Kingdom. While much of the research presented supports the view that physical activity benefits children's cognitive functioning, limited evidence is available concerning the effects of physical activity on learning (Donnelly et al, 2016). The evidence presented by Donnelly et al (2016) indicates that whilst there are encouraging links between physical activity, fitness, cognition and academic achievement, the research is not consistent in its findings and the effects of various areas of physical activity on cognition needs to be investigated further. Nevertheless, the literature does not suggest that any increase in physical activity *negatively* affects academic achievement or cognition and goes so far as to state that physical activity is essential for growth, development and general health.

There has been an expeditious increase in practitioners looking for further evidence highlighting the claimed benefits of physical activity and its influence on young learners. Physical activity advocates have long called for this necessary increase in physical activity in schools, suggesting that any time spent taking part in physical activity would benefit health

and may even contribute to academic performance. This has resulted in a rise in the number of new organisations and programmes who are striving to promote physical activity and make a positive impact. Using the evidence that is currently available it is possible to determine that physical activity does have a positive influence on cognition, brain structure and function; however, more research is required to establish the mechanisms, long-term effects and to translate these laboratory outcomes to a school setting.

The PATL Pedagogical Approach

PATL is an active learning approach that aims to use movement and physical activity to enhance academic performance in core curriculum topics, such as maths, English, PSHE and science, while promoting health and psychosocial wellbeing (Mwaanga and Prince, 2014; Kibbel et al, 2011). In PATL, a wide range of enjoyable and engaging physical activities and games are presented at varying intensities demanding learners to complete kinesthetic tasks with the aim of triggering thinking and reflection. We postulate in this paper that a close examination of the concepts, assumptions, beliefs and rationales, may distinguish PATL from traditional teaching approaches in core subjects, physical education (PE) and sport in schools. While it is outside the scope of the current analysis to delve into a detailed justification of PATL as a different paradigm, it is crucial that some unique features of a PATL pedagogical approach are highlighted only to provide further context for the findings of this paper. Here we briefly present the three core arguments which help extricate the PATL approach within UK schools.

First, we suggest that PATL is unique in terms of its formative philosophical worldview. Traditional Western education is firmly based on the philosophical view of dualism which views the mind and body as separate, and arguably that the mind is superior to the body. This can be seen through the siloing of the UK primary curriculum areas and the obsession with an academic exam focused system. Dualism is encapsulated in the popularised proposition by René Descartes; “Cogito, ergo sum” which translates into English as "I think, therefore I am". Conversely PATL, is based on the notion of monalism, which takes the view of metaphysics which refers to reality as a unified whole where all existing things can be ascribed to or described by a single concept or system. Thus, the mind and body are one system. Keeping with the monalistic view of ‘I think therefore I am’ is rearticulated to ‘I move therefore I am’ to centralise the role and importance of movement within the holistic perspective of children’s development. One clear implication of dualism is the prevalent practice that

prioritizes and privileges the so called ‘cognitive’ subjects (e.g. maths, English and science) at the expense of PE and the arts. PATL responds with movement driven education whose intended outcomes are equally cognitive, emotional and corporal.

Second, notwithstanding the multiple definitions of active learning, there is consensus that active learning is positioned as an instructional method which promotes participation and engagement of students in the learning processes (Layne and Lake, 2014; Bonwell and Eison, 1991). This contrasts with traditional teaching approaches which tend to centralise the teacher as the dispenser of knowledge and students as the passive recipients. PATL can be viewed as an extension of the active learning methodology whose emphasis lies in the use of different types and intensities of fun physical activities to promote engagement and participation in the learning process. The collaborative approach to peer learning could be promoted as a deeper sense making process can be achieved through this notion of a decentered pedagogical approach. Petty (2009) refers to the constructivist approach to learning which the PATL method falls into. The addition of physical activity helps to stimulate this learning process and adds the element of fun and variety of challenge. Government policy has played a defining role throughout the years in this area. In 2000 ‘A Sporting Future for all’ was published by the Labour Government. This policy, although ‘sport’ focused, was part of Labour’s modernisation plans and sat within the wider social development policy agenda, position sport as a way to address issues within education, amongst other things. Game Plan (2002) was the follow up policy that took one of the fist ‘crosscutting’ approaches to policy creation, endeavouring to bring together sport, physical activity and recognised social issues, with a view to putting sport at the heart of wider socio-political agendas and addressing broader inequalitites within society. More recently the shift towards focusing on using physical activity to address such issues is reiterated in the latest government sport policy. The Department for Culture Media and Sport advocates the broader social, psychological, physical, community and economic benefits sport and physical activity can produce for individuals and groups (Sporting Future: A New Strategy for an Active Nation, 2015). The new policy marks a shift from previous policies which have focussed on the role of sport and the promotion of the London 2012 Games Legacy (see Creating a Sporting Habit for Life, 2012).

Based on the PATL paradigm, it is contended that physical activity should be embedded holistically in children’s lives. With students sitting between four to five hours a day, the school is an ideal setting for increasing physical activity levels of children and reducing the

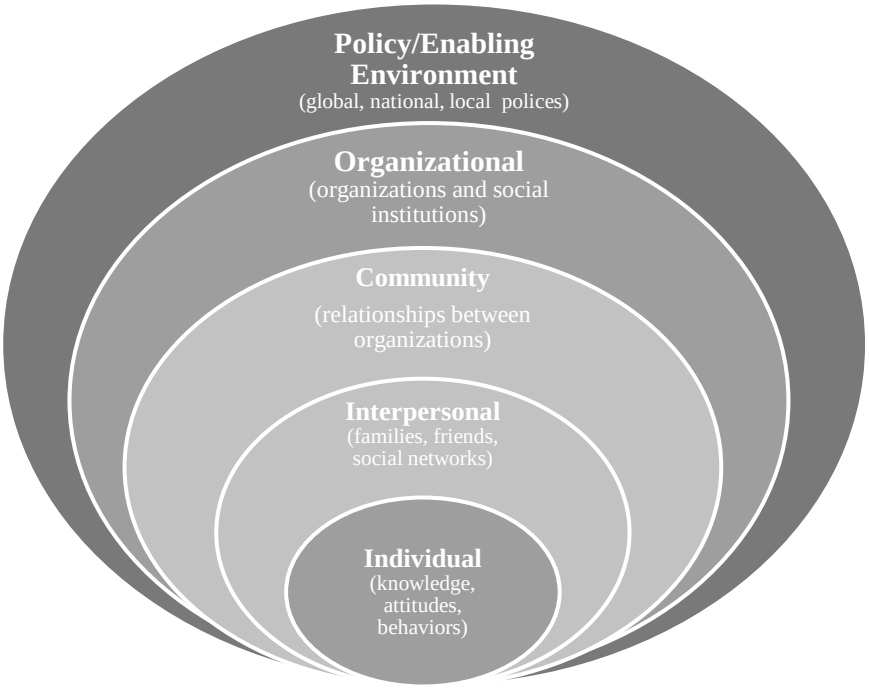
amount of time spent being sedentary (Chaput et al, 2013). Traditional approaches to address physical activity, health and wellbeing have involved increasing the number of PE lessons and adding before school, lunchtime and after school sports clubs. Although the methods can be embedded within these environments, PATL's main focus is on penetrating core curriculum lessons delivered during the school day by adding elements of physical activity. This involves embedding physical activity in the teaching of subjects such as maths, English and science, directly addressing the issues of sedentary during the teaching of subjects during the school day. Evidently, if PATL is to be delivered and embedded during the school day and combined with other subjects, an appropriate question is, how is PATL pragmatically embedded and managed within classrooms?

PATL Methodology and the Isle of Wight Context

There are two interrelated operational models through which PATL is delivered on the Isle of Wight. Thus, an understanding of these operational models and how they sit within the wider context of the Isle of Wight is cardinal to achieving the purpose of this paper. PATL delivery on the Isle of Wight is not a stand-alone intervention at selected schools but an integral part of an island-wide partnership called the Partnership for Education, Attainment and Children's Health (PEACH). PEACH is a 'whole-school' framework that aims to support the development of the 'whole-child' within, and through Isle of Wight primary schools. PEACH is the partnership and co-production of key Isle of Wight education and health stakeholders including the Executive Headteacher Group, Public Health and EduMove Ltd (EduMove is a UK based social enterprise). It builds on the Healthy Schools Award whose funding ceased in early 2010 leaving behind a vacuum for coordinated and systematic approaches to addressing cross cutting issues within education and health for children and young people. In line with the previous 'National Healthy Schools Award', PEACH focuses on three domains: a) personal, social, health and economic education, b) emotional wellbeing and mental health, c) physical activity and healthy eating.

The first conceptual model that frames both PEACH and EduMove interventions via PATL is the Social Ecological Model as shown in Figure 1 (adapted from the Centre for Disease Control, 2007). The Social Ecological Model has been adopted in similar studies to examine 'whole-child' approaches to educational attainment (see Lewallen et al, 2015), health promotion and public policy (see Golden et al, 2015) and more recently 'whole-community' approaches to health promotion (see Wold and Mittelmark, 2018). For this research, it is

useful because it considers the complex interplay between individual, relationship, community and societal factors to achieve desired behavioral change.



Level	Description

Figure 1. The Social Ecological Model

Individual	Characteristics of the agents (pupils and teachers) within a school context that influence or enable health and educational behaviors and preferences, including knowledge, attitudes, behavior, self-efficacy, developmental history, gender, age, religious identity, racial/ethnic identity, sexual orientation, economic status, financial resources, values, goals, expectations, literacy, stigma and others.
Interpersonal	Formal (and informal) social networks and social support systems within or sides the school that can influence or enable the agents' (pupils and teachers) to acquire or sustain preferred health and/or learning behaviors including family, friends, peers, religious networks, customs or traditions.
Community	Relationships among Isle of Wight organizations, institutions, and informational networks within defined boundaries, including the built environment (e.g., parks), village associations, community leaders, businesses, and transportation. A good example is the Partnership for Education, Attainment and Children's Health (PEACH).
Organizational	Schools' authority structures (rules and regulations and expectations as stipulated by inspectorate e.g. Ofsted) for operations that affect how, or how well, teachers teach and assess and also how children learn and meet expected criteria in health (Chief Medical Officer guidelines) and educational (Ofsted) and empowerment of teachers to teach.
Policy/Enabling Environment	Local (Isle of Wight), national and global laws and policies can be enabling or disenabling (E.g. new WHO policies on physical activity and health, whole-child approaches, PE and Sport Premium and Ofsted inspections and PEACH on the Isle of Wight).

Table 1. A Description of Social Ecological Model Levels Applied to PATL

The rings in the Social Ecological Model categorize factors at play within each level and illustrate how factors at one level influence factors at another level. Besides helping to clarify these factors, the model also suggests that to effect behavior change (e.g. learning, social and health related outcomes) it is necessary to act across multiple levels of the model at the same time. For example, it acknowledges the role of proximal (e.g. individual and interpersonal) and more distal (e.g. school physical environment, demographic factors, school policy) determinants of learning and health behavior change as necessary to achieve sustained positive change in the development of the whole-child.

The justification of PEACH and the holistic island-wide approach takes into account the commonality between some schools as well as their diversity. In terms of commonality, the problems faced by most schools are reflected in their below par performance when compared to national standards on key academic and health related measurements. For example, in the Department of Education report (2013/14), the Key Stage 2 achievement of expected objectives in maths, reading and writing was lower than England, with a large gap between disadvantaged and affluent pupils. Furthermore, 43% of Isle of Wight primary school pupils are failing tougher SATs tests and teachers are fearing children will be branded as failures which will have an adverse effect on their wellbeing (Association for School and College Leaders, 2016) and self-esteem. In terms of physical activity, the Isle of Wight School Survey

(2015) showed that locally less than one in five Year 6 (primary school) pupils are physically active (meeting 30 minutes per day), and by Year 10 (secondary school) this significantly decreases to less than one in ten. In keeping with the PEACH ethos, Isle of Wight schools with poor SATs results are advised to consider PATL programmes that tackle improvement in this area.

The second operational model deals with what happens within the school and relates to the organizational level of the Social Ecological Model. EduMove Ltd is a social enterprise that provides schools with resources aimed at empowering teachers to take ownership of PATL in their school (EduMove, 2017 www.edumove.co.uk). Encouraging schools to take control over how they implement PATL is crucial because contextual dynamics will vary from one school to the next. Moreover, the appreciation and competence in delivering PATL will also vary between and within schools. According to the PEACH framework, these programmes are coordinated and championed by the school's sport specialist or PE teacher who form part of a core PATL team with representation from each year group. Currently, this operational model is being applied loosely at three Isle of Wight primary schools. These schools receive PATL training and online resources to support their delivery whilst also being mentored by EduMove Ltd staff. However, it very easy to get blinded by the plausibility of each of these approaches and down play the fact that well intended models can fail at the implementation level. Thus, this paper examines how various vested interest groups within schools negotiate and manage the delivery of PATL to achieve the PEACH targets.

Research design

Evaluations linked to physical activity in children have most commonly relied on quantitative methods evaluating the magnitude of change and have typically not contributed to an understanding of why changes occur or how this impact has affected people or environments. The methodology adopted here to gather initial exploratory data was realist evaluation, an emerging methodology in the field of management. A realist evaluation is a form of theory driven evaluation that looks to the idea of a configuration of context plus mechanism which equals outcome (C+M=O) and looks to unearth what works for whom under what circumstances and why (Pawson and Tilley, 1997). It aims to get to the heart of why things work or do not work and creates a programme theory which is tested via a variety of methods. The methodology can compare whether a programme works differently in different localities (and if so, how and why) or for different population groups (Westhorp, 2014).

Initial candidate theories (Jagosh et al, 2015) can then be tested, refined and developed via qualitative methods such as interviews with the vested interest groups to ascertain what they deem to be of importance, in use or applicable i.e. to see if they hold true.

The theoretical drivers in realist evaluation allow an understanding of hidden mechanisms (confidence, engagement, motivation, enjoyment as examples) leading to particular outcomes which in a school environment and within a management context can be particularly powerful and influential. These theories are generated from a variety of domains; a researcher's or practitioner's experiences, existing literature, relevant data generated from previous research or from situational or needs analyses conducted within or in conjunction with the target population or community. The methods are then used to test and refine these initial theories utilizing the notion of retroduction to unearth the mechanisms at play. We argue therefore that realist evaluation, as a form of theory driven evaluation, has the potential to understand what is working or not for whom, under what circumstances and why within the discourse of PATL and the associated pedagogical areas.

The primary method of data collection involved conducting realist interviews with seven primary school teachers and one programme coordinator working for EduMove (n=8). The research participants were purposively sampled based on their existing experiences of EduMove within their school, and that they had utilised some active teaching and learning methods within their practice to date. Realist interviews are theory driven and focus on testing the programme theories with the input of the interviewee. The style of interview employed utilised the teacher-learner cycle (Manzano, 2016). Here, the interviewer presents and 'teaches' the theories under test to the interviewee who then refutes or confirms their existence and the ways in which they manifest themselves. They then assume the position of the teacher and 'teach' the interviewer about the theories from their perspective. This includes varying aspects of stakeholder involvement, the impact and overall influence of the mechanisms under discussion and how that interaction leads to the given outcomes. This means that the interviewer and interviewee play much more active roles in the process allowing a deeper understanding of what is working or not, why and how. This will happen through capturing the participants' stories because those related experiences of the programme illuminate the various processes and manifold outcomes (Patton, 2003). realist evaluation is unique in that it embraces subjectivity and lends itself to the idea of capturing effectively the richness and depth of data. It moves on from 'tell me your story' to 'what is it about your story that has made a difference, based on this given programme theory'. The data

was analysed using a coding method which cross referenced the given programme theories and refined them based on interpretative interviewee responses.

Observations of EduMove lessons (n=11) were also undertaken to test and refine the theories. The indicative criteria was decided upon based on existing research studies which had focused on pupil engagement levels via a behavioral interventions checklist. This checklist was concentrated on task behavior which included examining the length of time on each type of task and the approximate intensity level of the activity. Additional fieldnotes were also gathered in relation to anything the observer felt were relevant or important e.g. unintended outcomes, one to one interaction, peer to peer engagement or coaching and teaching styles employed. Tentative CMO configurations were then offered as were the subsequent thematic refinements and results as summarised below.

Findings

The empirical data bears out an interesting picture around the technocratic management within a primary school and the more specific and relevant management linked with a teacher's capacity to deliver PATL. Three key themes emerged from the analysis and are discussed in turn.

Head Teacher influence and Teacher (dis)empowerment

Within the primary school environment, the centrality of the teacher in the educational process of a child is undeniable. Therefore, the teachers' individual perception of empowerment or disempowerment to deliver innovative learning approaches are cardinal. However, the data exposes some fragility of teachers' empowerment relative to the school's culture, authority systems and curriculum restrictions. To a large extent, the data indicates that the senior leadership team (SLT) and, in many cases, the Headteacher themselves may be a source of this disempowerment. Teacher interview comments to underpin this are as follows;

> *'I get in trouble sometimes (with the Head)… I've had myself hauled over the coals because it's not been documented in their books' (Teacher 1)*

> *'We teach to the test, nobody (SLT) is interested in anything other than teaching to the test.' (Teacher 3)*

‘I said to SLT here (to introduce PATL methods)… but it’s very hard…it’s inertia.’ (Teacher 7)

The perspectives here point to the SLT as the cause of the teacher’s disempowerment to implement PATL or other innovative pedagogical approaches. In the primary school context, SLTs are often made up of the Headteacher, Deputy Headteacher(s), Department Heads and the School Business Manager. However, a school policy analysis would quickly reveal that the SLT themselves are not the genesis of this policy stance. Rather, the SLT are the messengers who pass on the pressure from other influential policy drivers such as the Department of Education (via Ofsted) and school governors. The Social Ecological Model is useful for acknowledging that the position taken by an agent within the school context is always linked to factors operating beyond the individual. The teachers’ perceptions and feelings of disempowerment must be understood within the cycle of overbearing policy that reproduces a rigid testing culture. By applying the Social Ecological Model as a loose policy analysis framework within the context of the Isle of Wight and PEACH, one is able to reveal other vested interests in pupil’s health and learning. For example, Ofsted, governors, SLT, class teachers, parents and pupils can all be considered as having vested interests. Arguably, for teachers to adopt PATL and other innovative teaching approaches within PEACH, a collaborative approach in planning, delivery and research must be consolidated.

Recording evidence of learning

This pressure to succeed and to demonstrate an ability to 'teach to test' means that the autonomy of a teacher to choose their own style and methods, which may include physically active methods, is diminished and in some cases totally eradicated. There is a further pressure to record evidence of learning and achievement which ultimately ends up being in the more traditional ways i.e. in books and written.

‘it was very much an emphasis on recording because probably from my personal thing I thought I needed for them to show me, show (the Headteacher), show everyone else what they had done’ (Teacher 2)

‘some schools do want a certain structure of learning, some having that recorded in their books.’ (Teacher 4)

In a similar vein, some teachers connected the recording of evidence to accountability in the role of a teacher.

> *'There's so much scrutiny on the grades that therefore possibly there might be a little bit more accountability for classroom teachers when that grade is scrutinised.' (Teacher 5)*

> *'teachers tend to play a bit more safe and tend to do what perhaps they're supposed to do and what they're encouraged to do and therefore because there's a different level of accountability, they don't have the flexibility.' (Teacher 7)*

The relentless requirement for evidence dominates within the primary school which halts creative development and the capacity of a teacher to make the decision to promote active strategies that have been shown to positively influence cognitive processes, on-task behaviours and as a result increase academic attainment levels. The pressure of a test dominated culture leads to a disrupted and disempowering environment where no one is actually to blame. Control is potentially taken away and decided outside the school which leads to disempowerment. This confirms the disempowering situation that leads to teachers not feeling confident in their abilities and their profession. This is further exacerbated by teacher training which focuses on teaching and pedagogy and *not* testing performance and evaluation. Relating back to the Social Ecological Model, it is evident that there is a detachment between the discussions at the policy level regarding testing and performance and at the individual level on pupils and teachers. Policy making is so removed from practice that it forms unrealistic targets to mediate this. For example, cultural restrictions at the community and interpersonal level will also affect individuals' health and education. Arguably, given the pressure on schools to achieve both health and educational outcomes, PATL could provide an alternative approach which empowers teachers to meet assessment targets *and* enables them to enjoy their teaching and 'teach to teach' rather than 'teach to test'.

In this vein, there might be scope for PATL to be considered as a redeeming pedagogy where teachers can regain their control and empowerment over teaching and testing. For example, testing erodes the hedonic or happy moments in their teaching, yet when pupils enjoy learning through PATL pedagogies, the happy moments can be brought back. There is strong evidence in the literature which argue that physical activity leads to increased levels of endorphins in the brain, which act as internal psychoactive agents yielding a positive

euphoric feeling. Within the context PATL and learning, two further hypotheses are drawn from this. Firstly, the body's euphoric feeling leads to pupils experiencing a positive and energizing outlook to the learning experience (Hillman et al, 2008). Secondly, a joyful PATL atmosphere encourages behaviors that further the supply of endorphins in pupils that make them more apt to learn how to successfully solve problems that may be perceived difficult. PATL is supported by principals of experiential education which is a philosophy of education that describes the process that occurs between a teacher and a pupil which infuses direct experience with the learning environment and content (Itin, 1999). For instance, kinesthetic learning or tactile learning hypothesis contends that PATL provides opportunities for students who learn best by using whole-body movement to process new and difficult information or learning with and through–physical activities, rather than listening to or watching a lecture (Favre, 2009).

The Teacher and classroom management

The classroom and its management are one of many ingredients that need to be addressed and managed to create successful PATL integration. This also involves examining the interaction with pupils and how the styles of teaching and learning is affected. The data suggests that teachers perceive the classroom environment in two ways; first, that teachers perceive a lack of control, and second, some teachers do experience optimism and express the potential for control in the space.

Knowledge and understanding of certain methods of PATL for teachers are at best under developed and, more often lost in the dense test-driven cultural expectations. There seems to be an element of worry around pupil behaviour and its unpredictable nature in the context of increased classroom movement and as such the lack of ability to engage with set learning outcomes.

> *'Obviously, in terms of 31 children in here all at once, doing that is very difficult.' (Teacher 1)*

Many of the teacher comments are linked to concern around classroom management linked to outcomes as well as having clear safety concerns around pupils who could be deemed out of control. Teacher interview comments to underpin this are as follows;

> *'In terms of safety obviously, there are times when I think, "Be careful!" (Teacher 4)*

‘I would suggest everyone would go back into the classroom and sit down then do their writing in a controlled, calm environment.’ (Teacher 5)

‘if you do then take the children out of a controlled, safe, contained environment and you put them into a much bigger space, I think some teachers are a little bit put off by that sense of space and they don't quite manage their children in the same way’ (Teacher 6)

There also seemed to be some consensus in the data around why they are perceived to have a lack of control stemming from Initial Teacher Training (ITT) experiences;

‘…they (NQT’s) are just being brainwashed really into one way of teaching.’ (Teacher 2)

‘Lack of training, lack of time to do the job properly…’ (Teacher 3)

The influence of the SLT also holds weight here in the sense that teachers seemed anxious about how to defend their use of physically active methods if pressed by a member of the SLT related to how are they meeting the curriculum objectives. For example, in more than one case SLT demanded a sample of pupil work to assess the content of written evidence for meeting curriculum objectives, and openly challenged the use of more active teaching methods as not producing the 'correct' type of evidence. This creates an issue around confidence in the teacher and their capacity to develop an understanding of effectiveness which leads to a lack of classroom integration and a poor perception of PATL and its implementation strategies. Moreover, there is a clear link with school operational management in that SLT can directly influence the confidence of a teacher to implement more PATL methods within their classroom through an outcome driven curriculum and constricted and convoluted policies. Elements of the Social Ecological Model can again be applied here; the organizational influence weighs heavily on the practice of the teachers ultimately leading to restricted pedagogical approaches, which in turn affects their relationships with the pupils, prioritising the need for testing and recording of evidence, once again pointing towards this lack of empowerment which then manifests itself as poor classroom management.

However, there were some teachers that viewed the space more positively when using PATL showing that there are some glimmers of potential if PATL was made more easily accessible and deliverable via the classroom management structure;

'I don't think there's a right way or a wrong way of doing it. I think it's knowing the class that you're with, knowing the children, their learning styles, how they work together, so I think that's really important.' (Teacher 2)

'There's some children that get really conscious by that and there are some children that thrive by that. So, it's finding something that's fun for all of them which is difficult. It is really difficult.' (Teacher 3)

A large part of this centres around the management of the teacher. This involves the pupil relationship and expectations between the two parties as well as the influence of SLT and related teacher autonomy.

'I'm trying to think of lots of inventive ways for children to use the space…' (Teacher 5)

'It makes the classroom a more interesting place to be.' (Teacher 6)

'there's so much of the curriculum that you can teach in an active way' (Teacher 7)

Pupil engagement and management within the classroom then becomes a highly influential factor with the use of interventionist strategies to attempt to unlock and alleviate some of the sedentary and oppressive nature of the classroom. Failure to perceive the classroom as a space which has potential to integrate physical activity could lead to a lack of opportunity for teachers to engage with PATL methods if they perceive physical activity as something which only happens outdoors or in the school hall. In this vein, a 'whole-school' approach to the management of PATL becomes more difficult because it is compartmentalized into existing structures such as PE rather than being embedded holistically across the school.

In line with the secondary aim of this paper, perspectives provided by the current EduMove programme coordinator were useful in elucidating how EduMove programmes encapsulated some of the previously mentioned features of the PATL pedagogy. He contended that the EduMove M.E.E.L (Move Enjoy, Engage, Learn) criteria are key to understand how EduMove delivers the PATL pedagogy. Thus, to achieve the learning outcomes of any PATL lessons, children must enjoy engaging in tasks delivered via a fun movement activity;

'Overall, we want to make sure that all PATL programmes meet our M.E.E.L (Move, Enjoy, Engage, Learn) criteria. The MEEL underpins the PEACH work on the Isle of Wight as we deliver on the physical activity domain' (EduMove Coordinator)

Additionally, the EduMove coordinator emphasized EduMove interventions were able to be delivered inside the classroom in keeping PATL pedagogy. In this vein, he brought to light the EduMove classroom-based interventions;

'*children are often seated for over 5 hours a day in the classroom. This lowers their metabolism and increases their chances of poor health in the long term. Lower metabolism also means poor blood flow to the brain which I believe lowers their concentration. We have three interventions to address this. Firstly, to do fun exercises every 25 minutes of sitting. secondly, using our MoveClass app where we integrate revision with exercise. lastly, we have a portal with lesson plans for low intensity and limited movement PATL activities' (EduMove Coordinator)*

The EduMove Coordinator's narrative also responds to some of the challenges regarding the compartmentalization of physical activity in the school week. The coordinator asserts that PATL integration in schools doesn't only refer to high intensity physical activity, but also refers to low intensity physical activity which might involve pupils standing and walking around the classroom. Emphasizing lower intensity movements may also enhance the sustainability of such changes because there is greater flexibility for integrating short activities that don't require pupils to change into 'PE kits'.

Likewise, this programme has PATL features which are supported by some emerging evidence in a recent seminal review by Donnelly et al (2016) who suggested that physically active lessons generally result in improvements in academic achievement, whereas attempts to increase activity in PE do not. However, Donnelly et al (2016) advocate for more robust research due to multiple methodological shortcomings and inconsistencies among studies which support the efficacy of physically active lessons.

Conclusion and practical implications

In accordance with the overall purpose of this paper, which is to examine how teachers negotiate and manage the delivery of PATL pedagogy within the PEACH context, two paramount conclusions are worth underscoring. Consistent with emerging academic evidence

(e.g. Donnelly et al, 2016) and as attested by the EduMove coordinator, PATL as pedagogy has significant potential and scope particularly when framed and 'ring fenced' within the PEACH policy and ethos. However, within the complex dynamic of the school, the implementation of PATL and other innovative pedagogies face numerous management challenges that frustrate the implementation of PATL and lead to feelings of disempowerment and anxiety among teachers.

First and foremost, teachers seem to suggest that 'teaching to test' is policed by the SLT and is what steers the curriculum and learning culture in their schools. Expectedly, there is a general dislike for both the 'teaching to test' culture and the way the SLT emphasizes it in their school. This generated feelings and perceptions of disempowerment and anxiety among teachers which effected the impetus to implement PATL and other innovative pedagogies which are known to benefit the learning and health of the child. Within the complex dynamic of the school, teachers' perceptions of control (i.e. empowerment), positive mental wellbeing and confidence are cardinal in the delivery of an effective curriculum. Interpreting this dynamic context from the lenses of the Social Ecological Model reveals that, in addition to the SLT, there are a wide range of vested interests in pupils' health and education, for example Ofsted, governors, parents the Department of Health and private sector provides. Thus, the perception that headteachers are the *source* of the testing culture in schools is incorrect because headteachers experience pressure from external stakeholders such as school governors and Oftsed. Instead, we must explore collaborative management and teaching approaches that ensure achievement of Ofsted targets, which are used to judge performance of the SLT, while developing 'whole-child' learning and health needs. These needs are more complex than solely academic performance measures because they are long-term in impact and beyond the scope of Ofsted. The revelation of other policy entrepreneurs within the school dynamic shift the blame of failure from the teachers alone to include other agents within school context. Acknowledging the presence and role of other agents, as identified in Table 1, must help reshape the school policy landscape. For PEACH on the Isle of Wight, partners must consider clear roles and responsibilities of all stakeholders and vested interests when designing whole-child approaches.

Clearly, recommendations must focus on tackling the rigid testing culture and the empowerment of teachers to implement PATL. First, the work to promote PATL must facilitate rich conversation among PEACH stakeholders. These conversations should be targeted at unravelling the root causes of the testing culture and teachers' disempowerment to implement PATL. This can be achieved by incorporating praxis social analysis (also called

action research) in all PEACH and PATL training and awareness programmes to encourage in-depth and critical discussions about 'whole-child' approaches. Second, PATL training must prioritize empowering teachers to implement PATL in schools. Empowering mechanisms may include support and mentorship of teachers which allow for the organic development of skills, confidence and attitudes to develop their own realistic approaches for integrating PATL. In this research, teachers alluded to lower levels of physical activity intensity within classrooms which can be simpler to introduce and sustain. When teachers are empowered to take control over deciding how PATL is delivered and how often it is embedded, the impact of overall management of physical activity across the curriculum and the whole school can be positively addressed.

The case study of PEACH indicates the powerful effect of such an outlook which can be highly influential in positively affecting the management structure and, in turn, the introduction and monitoring of these physical activity opportunities within a holistic joined-up policy response. This paper indicates the need to create realistic and targeted policy responses regarding the nature and acceptance of PATL methods. Organisations such as EduMove Ltd, Maths of the Day, Premier League Primary Stars and Premier School Sport Coaching are aligning themselves with this shift which is reflected in the products and programmes being offered to address academic and health outcomes. A more collaborative, empowering and less technocratic management style are advocated but they will only result if Ofsted targets are incorporated and achieved via PATL. Thus, the authors support the PEACH ethos and agenda which advocates for a collaborative management approach that focuses on the empowerment of teachers and managers to deliver PATL.

Potential Conflict of interest

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