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Journal of Adventure Education and Outdoor Learning

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/raol20

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To cite this article: Andrew Williams & Nalda Wainwright (2020) Re-thinking adventurous activities in physical education: models-based approaches, Journal of Adventure Education and Outdoor Learning, 20:3, 217-229, DOI: 10.1080/14729679.2019.1634599

To link to this article: https://doi.org/10.1080/14729679.2019.1634599

Published online: 27 Jun 2019.

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JOURNAL OF ADVENTURE EDUCATION AND OUTDOOR LEARNING
2020, VOL. 20, NO. 3, 217–229
https://doi.org/10.1080/14729679.2019.1634599

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Re-thinking adventurous activities in physical education: models-based approaches

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ABSTRACT

Adventurous activities are established as an integral aspect of The National Curriculum for 5–16-year-olds. Securing a place in the curriculum provides adventurous activities with an unparalleled opportunity to reach more pupils than any other form of delivery during these formative years. However, little consideration has been given to adventurous activities as curriculum pedagogy in recent years. This paper refers to an alternative *models-based* approach to teaching and learning that presents adventurous activities with the best opportunity to fully realise the specific contribution it makes to young people's physical education learning. Secondly, it considers key challenges a *models-based* approach to adventurous activities might present for schools and teachers and suggests ways to build a rigorous evidence base to underpin its continued inclusion as an essential component of physical education.

KEYWORDS

Adventurous activities; physical education; curriculum; models-based approaches; evidenced-led learning outcomes

Since the 1944 Education Act young people in the United Kingdom (UK) have benefitted from the inclusion of some form of adventurous outdoor activity as a statutory entitlement in their educational development (Cook, 1999). Initially framed around the provision of 'camps, holiday classes, playing fields, play centres' local education authorities (LEAs) were empowered to build upon the growing interest in camping, scouting and expeditions as a way to address key social concerns of the time such as fitness for war, character training and rising juvenile delinquency (Cook, 1999). Nicol (2002a, 2002b) has mapped the utilitarian use of outdoor education in Scotland post world war two noting the politicisation and instrumental use of outdoor education as a panacea for many of the major social concerns of the time. More recently, many would argue that learning outdoors as part of a young person's curriculum experience is experiencing the best of times with an upsurge of interest in the Forest Schools Movement (Davis & Waite, 2005; Knight, 2009; Passey & Waite, 2011) and the recognition of outdoor play as a fundamental principle of Foundation Stage learning in England and the Foundation Phase in Wales, helping to establish strong pedagogical foundations for learning outside the classroom (DfE, 2017; Welsh Government, 2015). Building on these developments adventurous activities has secured a place in The National Curriculum for Physical Education for 7–16-year-olds either as a compulsory or optional element of the curriculum depending on the key stage of learning and the devolved administration (WAG, 2008; DfEE/QCA, 1999; LTS, 2010). Securing a place in the National Curriculum as a statutory entitlement is crucial for the development of adventurous activities because it ensures all pupils have the opportunity to experience adventurous activities as part of a broad and balanced physical education irrespective of gender, socio-economic background or physical ability. Furthermore, it offers the subject area the chance to contribute to the shape, direction and priorities of society in the present and immediate future (Robinson, 2015). In other words, securing

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a place in the curriculum as an integral component of a young person's physical education provides adventurous activities with an unparalleled platform from which it can reach more pupils than ever before, with government statistics identifying over 3 million pupils attended state-funded schools in 2018 (DfE, 2018). Such is the tremendous reach of The National Curriculum. Given this positive outlook for adventurous activities in the school curriculum it is surprising to note, with the exception of a few studies (Sutherland, 2012; 2014; Sutherland, Ressler and Stuhr, 2009; Beames & Brown, 2016; Williams & Wainwright, 2016a, 2016b) the lack of consideration that has been given to this aspect of the curriculum in recent years, and the real potential of such research, as highlighted by Rodrigues and Payne (2017) in considering environmentalization of the physical education curriculum in Brazilian universities.

This paper seeks to contribute to our understanding of the current and future curriculum relationship between adventurous activities and physical education. We do this by referring to an alternative *models-based* approach to teaching and learning that, we suggest, presents adventurous activities with the best opportunity to fully realise the specific contribution it makes to young people's physical education learning. Secondly, we consider some of the key challenges that a models-based approach to adventurous activities might present for schools and teachers and suggest ways to build a rigorous evidence base to underpin its continued inclusion in the curriculum as an essential component of physical education and a statutory right for all young people.

In outlining a different approach to adventurous activities as part of the physical education curriculum this paper seeks to add to the recent call to 'illuminate new or undeveloped ways of learning through adventure, and stimulate further critical discussion' (Allin & Humberstone, 2015, p. 93) around adventurous activities and/or outdoor education as curriculum learning. In so doing, we recognise that we are proposing to work within the existing structures of The National Curriculum with all its shortcomings and weaknesses (Robinson, 2015), however we have chosen this approach because we believe curriculum change is better received and more realistic when it is evolutionary rather than revolutionary (Fullan, 1999, 2016). Neither do we deny calls for change in the physical education curriculum (Casey, 2012; Kirk, 2010) or to the 'increasingly formulaic and restrictive practice' of adventurous activities pedagogy highlighted by Brown and Beames (2017, p. 298). Like others (Beames & Brown, 2016; Brown & Beames, 2017; Williams & Wainwright, 2016a, 2016b) we believe that learning opportunities for and through adventurous activities in the curriculum have been increasingly marginalised and distanced from the day-to-day, week-to-week experiences of pupils, making them tokenistic and irrelevant when, and if, they do get the chance to take part. If adventurous activities were taken away from the physical education curriculum pupils would not miss them because in many schools they are done badly, lack progression, fail to connect with local opportunities and traditions, are too expensive to do in pupils own time, and lack alignment with what pupils perceive to be the really important learning that goes on in the school (Fiennes et al., 2015; Rickinson et al., 2004; Waite, Passy, Gilchrist, Hunt, & Blackwell, 2016). In essence, as they are first experienced by many young people today they have nothing to do with other aspects of pupils' lives in or out of school. Responding to such concerns the models-based approach to adventurous activities proposed in this paper seeks to bring adventurous activities into the school grounds and surrounding area as part of the normal experience of physical education that is the entitlement of all pupils up to 16 years of age. These learning experiences should be deliverable within the normal school timetable for physical education and taught by the physical education teacher, with the assistance of other skilled professionals as required. The intention being to allow every pupil the chance to gain experience of adventurous activities that is authentic and meaningful to their lives in school, and to encourage lifelong participation and enjoyment in later life.

Models-based practice—a different approach

Models-based practice emerged from the United States of America (USA) in the last 30 years driven by a broader concern over the nature and purpose of physical education as an academic subject

(Jewett, Bain, & Ennis, 1995; Metzler, 2011). These authors argued for a new 'models-based' (Lund & Tannehill, 2005) approach to physical education in which the curriculum and its teaching strategies are brought into alignment to achieve distinctive learning outcomes and to address many of the concerns over drop-out rates (Kirk, 2010), competition (Leah & Capel, 2000), assessment (Hay & Penny, 2013), and equal opportunities (Pitrowski, 2010), that continue to undermine physical education in the UK today. Metzler (2011) clarifies the models-based approach as:

> A comprehensive and coherent plan for teaching that includes a theoretical foundation, a statement of intended learning outcomes, teachers content knowledge expertise, developmentally appropriate and sequences activities, expectations for teacher and student behaviours, unique task structures, measures of learning outcomes, and mechanisms for measuring the faithful implementation of the model itself. (Metzler, 2011, p. 22)

What is central to the models-based approach and fundamentally different from the current approach to physical education in the UK is that it draws on the collective history, traditions, practice and, most importantly, previous research around specific approaches to physical education (such as creative activities, health, fitness and well-being, and competitive activities) to identify precisely what benefits and outcomes can be gained by undertaking those particular activities. It does not claim that the five domains of learning (physical, lifestyle, affective, social, cognitive) identified in Bailey's (2009) meta-analysis of the aims and standards of physical education will be achievable by each and every different forms of physical education practice. On the contrary, it justifies the existence of different forms of activity on the basis of the research evidence about pupil learning and proposes that all aspects of the curriculum, including adventurous activities, should be accountable in this way. Taking an evidence-led approach to the inclusion of particular forms of physical activity represents a huge step forward for physical education in the UK and demands an objective and honest evaluation of the claims made for all forms of physical education learning including adventurous activities.

Metzler (2011) identifies eight pedagogical models for physical education that have been developed over the last 40 years to address different learning outcomes attributed to physical education. The eight models are: 'sport education' (Sidentop, 1994), 'cooperative learning' (Grineski, 1996), 'inquiry teaching' (Metzler, 2011) 'peer teaching' (Metzler, 2011), 'tactical games' or Teaching Games for Understanding (Bunker & Thorpe, 1982), 'direct instruction' (Rosenshine, 1983), 'teaching personal and social responsibility' (Hellison, 2011) and 'personalised system for instruction' (Keller & Sherman, 1982). More recently Haerens, Kirk, Cardon, and De Bourdeaudhuij (2011) have proposed a health-based fitness model of physical education that eschews the skill or sport outcomes addressed in other models. Adding further impetus to the call for a change to models-based approaches to physical education Casey's (2012) evaluation of 45 peer-reviewed studies on the implementation of models-based interventions in physical education reports teacher's identifying 'real differences in their students learning' (Casey, 2012, p. 11) and tangible benefits in their own professional development. Recognising models-based practice as 'the bookies favourite' (Casey, 2012) to move physical education pedagogy forward he endorses Kirk's (2010) hard-hitting and highly controversial view on the need for radical reform of the subject to avoid more of the same shortcomings leading 'inevitably' to its eventual extinction as a subject area.

Drawing upon the emergence and growing popularity of the models-based practice in physical education Williams and Wainwright (2016a, 2016b) have outlined a rationale and plan for an adventurous activities model of physical education. Part one draws upon outdoor education theory and research evidence to draft an advocacy paper for adventurous activities in physical education (Williams and wainwright, 2016a). Part two outlines the key features, or 'non-negotiables' of a models-based approach to adventurous activities, as well as the considerable challenges that would have to be faced for it to fully realise its potential to contribute to pupils' school and lifelong learning (Williams and wainwright, 2016b). Figure 1 outlines a framework for adventurous activities within a models-based approach to physical education.

In line with the rationale underpinning models-based approaches to physical education a key theme encapsulating the distinctive contribution adventurous activities makes to pupils' learning

has been identified from the literature. We suggest that *personal growth through adventure* as conceptualised by Hopkins and Putnam (1993) identifies clearly the focus on trans-domain learning that is evidenced in the research on outdoor education.

> The concept of growth … .is not just the exposure to wild places, or the simple discipline of working with others. It is the inevitable outcome of the process of confronting oneself within the context of other people and the environment. The relationship is dialectical, the aspiration synergy. It is within this synthesis that the value of adventure education lies. (Hopkins & Putnam, 1993, p. 15)

Developing this idea further, Hopkins and Putnam comment on the prioritisation of effective learning outcomes as the primary focus of adventurous activities which have 'a positive impact upon an individual's self-confidence, upon their understanding of the world and on their actual behaviour' (ibid, 15). Quinn (1999) similarly identifies the notion of growth within the adventure process in commenting.

> Without actively seeking, without attempting to, and going beyond what one already knows one can accomplish, there is no growth. Strenuousness of mind, heart and body engenders growth. Where there is no growth, there stagnation is the rule, a human being offers nothing, either to one's self or to society. Quinn (1999, p. 151)

The thoughts of Hopkins and Putnam (1993) and Quinn (1999) clearly locate the major theme of *personal growth through adventure* within the affective domain of learning. At the same time we recognise that the learning in physical education does not occur exclusively in only one domain (Bailey, 2009; Kirk, 2013; Metzler, 2011) and our review of research provides support for related contextual learning in the physical and cognitive domains as well. Metzler (2011, p. 19) refers to this as 'domain interaction' in recognising that 'no activity promotes learning exclusively in a single domain even when one domain is prioritised over others', and that pupils will always learn something in the other domains even when they are not emphasised. We believe this best describes the complex learning interactions that occur when pupils are actively engaged in adventurous activities where the main learning outcome is in the affective domain with opportunities for learning in the physical and cognitive domains as well. The breadth of evidence suggests that domain interaction can and does occur, however, the overwhelming contribution of adventurous activities to a pupils' physical education is evidenced to impact on pupils' effective learning (Alison, 2000; Brown, 2006; Cason & Gillis, 1994; Hans, 2000; Hattie, Marsh, Neill, & Richards, 1997;

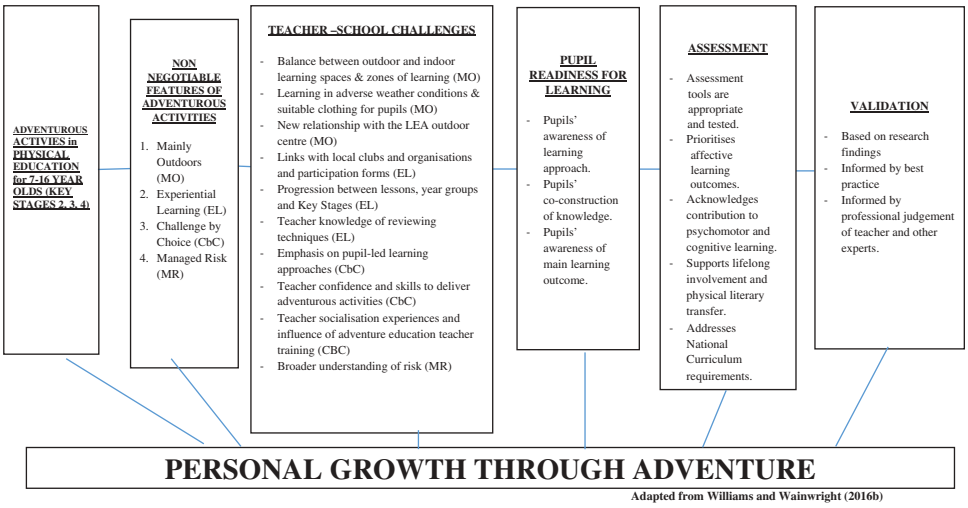

Figure 1. Adventurous activities model of physical education at key stages 2, 3, 4.
Adapted from Williams and Wainwright (2016b)

Nicol, 2002a; Rickinson et al., 2004; Williams & Wainwright, 2016a). Following the research evidence and clarifying the specific contribution made to pupils' learning as opposed to relying on anecdotal observations, and unsubstantiated claims has to be the way forward for adventurous activities if it is to fully justify its current and future place within the curriculum.

Non-negotiable features of adventurous activities

Adopting a models-based approach to physical education also requires what Metzler refers to as 'unique task structures' (2011, p. 22). More commonly referred to as 'non-negotiables' these are the key and defining features of a model that distinguish it from other forms of physical education, such as the widely used multi-activity approach (Curtner-Smith & Sofo, 2004). An example from the sport education model for physical education may prove helpful at this stage. Sport education is the best known, most widely researched and most universally adopted pedagogical model, as defined by Metzler and others, in both the USA and the UK (Casey, 2012; Curtner-Smith & Sofo, 2004; Dyson, Griffin, & Hastie, 2009; Haerens et al., 2011; Kitchen, 2006; Sidentop, Hastie, & van der Mars, 2011; Wallhead, Garn, & Vidoni, 2013). Responding to the dramatic rise to prominence of sport in society over the last 50 years sport education recognises its unique contribution to pupils' learning is encapsulated in its underpinning theme as 'the development of competent, literate and enthusiastic sportspersons' (Sidentop, 1994, p. 265). In other words, the sport education model makes itself meaningful to young people's learning by reflecting the evolving role of sport in society. Non-negotiable features of the sport education model 'include seasons, record-keeping, festivity, a culminating event, persisting groups, and roles in addition to a player such as captain, umpire, scorekeeper, equipment officer and so on' (Kirk, 2013, p. 225). In other words, this is how pupils should experience sport in physical education lessons. All these roles and features are explored in lessons so that pupils get to experience and connect with the real and multi-faceted world of sports organisation and participation in society. As such, lessons and learning are not driven by an all-consuming focus on skill acquisition and competitiveness, to decide who will be picked for the 1st team in football, netball, rugby or hockey. Sport education is about becoming sport literate in the many different and varied ways that people experience and enjoy the sport in their local communities. In this way, a young person's experience of sport as part of school physical education makes it authentic and meaningful rather than being irrelevant and demotivating. We suggest this is the way forward for adventurous activities in physical education.

Applying this idea to adventurous activities and drawing upon their review of the literature four 'non-negotiables' can be identified as the framework around which adventurous activities are experienced by pupils (Williams & Wainwright, 2016b). They are: *mainly outdoors; experiential learning; challenge by choice; managed risk*. The role of a 'non-negotiable' feature in a models-based approach to physical education cannot be over emphasised. Non-negotiable features identify the distinctive elements of a particular approach to physical education that embody it in practice, and provide the link between underpinning theory, scheme of work, teaching approach and pupil learning outcomes. Critics may challenge our evaluation of the literature and could possibly offer alternative key features (Beames & Brown, 2016), however we are confident that these four non-negotiables represent a cohesive framework for adventurous activities which ensures pupils not only recognise they are taking part in adventurous activities as part of physical education, but also realise the behavioural expectations that are required in order for them to be successful and able to demonstrate the appropriate learning outcomes.

Without going into great detail a brief explanation is required for our thinking around each non-negotiable feature. We also consider some of the key challenges each non-negotiable is likely to present for schools and teachers in their attempts to increase the availability of adventurous activities learning in and around the school grounds and within the normal school timetable.

Mainly outdoors (1/4)

Mainly outdoors is the first of the non-negotiables that we identified. This may seem obvious to many reading this paper however we remind the reader that the world of the physical education teacher working in an inner-city secondary school is very different indeed to that of the outdoor educator who already believes in the value of outdoor education and works in a setting that has immediate access to an accessible outdoor environment. To this end, we highlight two points that need to be considered in relation to *mainly outdoors* as a non-negotiable feature of adventurous activities. Firstly, we recognise the limitations and vagaries of weather in the UK that can and does impact upon a teacher's ability to deliver adventurous activities in the school setting. On the one hand, this suggests that the use of indoor venues such as climbing and traversing walls, as well as nearby swimming pools and indoor ski slopes, are valuable facilities to be utilised to deliver adventurous activities and to inspire pupils. Indeed, making use of indoor facilities may for some young people be the most appropriate starting point to introduce them to curriculum focused adventurous activities (Brown, 2006; Creasey & Long, 2008; Horizons, 2018). However, we do not believe that indoor locations should be the only or main locations for adventurous activities. Such locations simply cannot provide the progressive levels of challenges that are required for a scheme of work and young people need to be encouraged to be more active in natural and outdoor settings for many reasons, not least being the need to make adventurous activities real and meaningful, as well as the benefits to well-being (Munoz, 2009), and as a technology-free space (Louv, 2005). At the same time, when the weather is bad it is foolish to expect that young people will learn or enjoy such experiences. Bad weather is simply not conducive to positive learning for the vast majority of young people. However, rain, cloud, wind and cold (all in moderation) are normal weather conditions in the UK and just because it is not beach weather should not mean that adventurous activities are cancelled. Teachers and schools will have to challenge pupil and parental expectations of what are appropriate and acceptable weather conditions for adventurous activities. To this end, it is encouraging to know that schools are increasingly investing in undercover outdoor spaces, seamless indoor-outdoor classrooms, and wet weather clothing as they look to meet governmental agendas, curriculum changes and parental demand (Knight, 2016; Waite, 2011; Williams & Wainwright, 2014).

A second concern around *mainly outdoors* as a key non-negotiable feature focuses attention on the relationship between the school and the LEA outdoor education centre. Self-evidently delivering more opportunities for adventurous activities learning without completely disrupting the existing school timetable requires that adventurous activities experiences should be deliverable in or around the school grounds. This suggests we have to move beyond thinking of the LEA outdoor education centre as the sole provider of such learning. This is not to suggest that outdoor education centres have no role to play in a school-focused, models-based approach to adventurous activities. They certainly do have. However, we see them being used at the culmination of a young person's learning (such as at the end of a key stage) that is made memorable because a stay at an outdoor education centre is aligned to and further progresses a pupils' formative school-based experiences of adventurous activities. As such, we favour the 'four zones of learning' approach suggested by Beames, Higgins, and Nicol (2012) in which outdoor learning spaces are identified radiating outwards: from the school to the local neighbourhood, day excursions or field trips further away; and residential outdoor centres. Making full and better use of the many outdoor opportunities and facilities available in these different spaces would greatly increase the range of experiences available within the subject area, and we are particularly interested in the idea of urban outdoor education (Beedie, 1999) as well as improving school–community links.

Experiential learning (2/4)

Experiential learning is the second non-negotiable feature of a models-based approach to adventurous activities identified from the literature. It is not our intention here to consider experiential

learning theory in detail or to make an argument for it as a valid and meaningful approach to learning. Many authors have already done this and most outdoor educators will be reasonably familiar with the underpinning theory and arguments (Breunig, 2005; Itin, 1999; Roberts, 2012; Seaman, 2008; Warren, Mitten, & Loeffler, 2008). However, we feel that identifying *experiential learning* as a non-negotiable feature of adventurous activities does raise two important issues that are worthy of further consideration at this stage. Firstly, most outdoor educators will be aware of the commonly practised Plan-Do-Review approach to adventurous activities that draw from the experiential learning theory (Heron, 2005; Hopkins & Putnam, 1993). This approach fits well with models-based approaches to physical education as it underscores pupils' direct involvement and greater ownership of their learning, the use of a wider range of teaching strategies, as well as emphasising progression between previous experiences and new learning.

What matters for us is not that teachers and schools stick to the traditional and expected diet of adventurous activities, but that they provide activities that are real and meaningful to pupils because they are grounded in local popular culture. As such adventurous activities might include new and emerging activities such as paddle boarding, parkour, body boarding, slacklining, mountain biking, skateboarding, bushcraft and wild swimming that are considered as (if not more) interesting by young people than traditional activities such as canoeing, sailing, surfing, mountain walking, caving, camping and rock climbing (Caldwell, 2007; Cook, 2011; Glenny, 2017; Watson, 2013). What we ultimately want to see is more young people taking school-based learning of adventurous activities into their local community parks and open spaces in their own leisure time. This can only be achieved when they are given opportunities to draw upon and connect with the locally accessible forms of adventurous activities that they see and experience around them. Such an approach provides for a more vibrant and inclusive culture of adventurous activities for young people in the school and establishes a platform and foundation for future, and lifelong participation, and enjoyment.

The second issue we wish to highlight associated with *experiential learning* recognises the importance of reviewing to support pupil learning. In highlighting the value of reviewing to adventurous activities two particular points strike us as important. The first acknowledges a clear link between the prominence of reviewing in outdoor education discourse (Bunyan, 2011; Heron, 2005; Mortlock, 2011, 2009) and its value in encouraging young people to reflect deeply on their experiences. However, whilst there are many who believe that reviewing is essential we recognise the real limitations that will be placed on teachers who actually deliver adventurous activity experiences in school settings. The limited amount of lesson time and large class sizes mean that reviewing each and every experience may simply not be practical. Indeed, teachers will quite correctly point to the need to prioritise pupils' engagement and active participation over the requirement to include an end-of-class review (Casey, Dyson, & Campbell, 2009). We suggest it is unrealistic to expect all adventurous activity learning experiences to be formally reviewed (Bunyan, 2011) and agree with Greenaway's suggestion, 'The fact that reviewing of experiences can bring out valuable learning is not an argument for reviewing *all* experiences' (2008, 350, author's italics). In considering this issue further Higgins (1997) highlights the importance of participants having 'ownership' of their own learning which encourages pupils to reflect on their experiences in private and after the school day has finished. Brown (2004) is one of a number of researchers (Chapman, 1995; Estes, 2004; Rea, 2006) who comments on the implicit power relations inherent in the teacher/facilitator–pupil relationship. He draws attention to how facilitators organisation of the review, 'serves to regulate participants' opportunities to contribute, and how (s)he acts as a gatekeeper for the admissibility of knowledge' (p.101). Similarly, Rea (2006) reminds us of the theoretical framework on which adventurous activities are based in making a clear distinction between the 'experientialist model' which allows the participant to construct meaning from their experience if, how and when they want, and the 'interventionist model' which priorities the active processing of the experience by a teacher/facilitator. Of particular prominence, to experiential learning, as a key feature of adventurous activities is the research by Sutherland (2014) into adventure-based facilitation in the USA. She found that pre-service physical education teachers struggle with how to facilitate an effective pupil-focused review. In response, she developed a Sunday Afternoon Drive debriefing model for

novice teachers to teach adventure-based learning that can be delivered within the normal time constraints of a school physical education lesson (Sutherland, 2012). Undoubtedly a tension exists around the need for reviewing of pupils' experiences as promoted by broader theory and the restrictions imposed by a school timetable. To this end, we advocate the need for regular reviewing of adventurous activities to support pupils as independent thinkers, and that teacher discretion should determine precisely when, where and how that should happen.

Challenge by choice (3/4)

The third non-negotiable feature of a model for adventurous activities was identified from our review of the literature as *challenge by choice*. Encouraging pupils to take increasing responsibility for their own learning is a fundamental principle of all subjects (DfEE/QCA, 1999; DfES/DCMA, 2008a; WAG, 2007), and has a particularly strong tradition within outdoor education (Beames et al., 2012; DfES/DCMA, 2008b; Hopkins & Putnam, 1993; Ogilvie, 2013), and most particularly within community and voluntary settings such as The Prince's Trust, Scouts Association, Duke of Edinburgh Award and Outward Bound. Hodgson and Bailie (2011, p. 61) emphasise the importance of pupils being active agents in their own learning in which 'many benefits that clients gain result from their perception of their own competence and autonomy . . . . We undermine this aspect if we deny them the opportunity to make their own decisions'. Expanding this idea we believe the most challenging experiences are ones that engage learners in all domains of learning (Bailey, 2009) and through 'challenge by choice' motivate and empower pupils to choose the level of their engagement. However, Russell and Bisson (2003) offer a word of warning in noting that challenge by choice should not be seen as an easy option or a get-out clause for non-participation. Rather, it is about raising pupils' awareness of how important they are in determining their own learning and success. From the opposing perspective Sibthorp, Paisley, Gooking, and Furman (2008) comment on the negative and debilitating effect that too many choices can have, and the need for staff to walk a fine line between offering realistic decisions to students that do not jeopardise safety yet are meaningful in some significant way' (146), whilst Beames and Brown (2016) identify personal 'agency' as one of four key elements of an adventure. We recognise that encouraging and supporting pupils to take more of a lead in determining the level at which they engage with activities will also make significant demands on teachers. In particular, we foresee teachers making use of more pupil-led strategies to support and identify when they are expected to be more active in directing their own learning experience. We are not suggesting a wholesale move away from teacher-as-instructor roles, and indeed there will be situations where direct instruction is required. What really matters is that the most appropriate teaching style (Mosston & Ashworth, 1986) is adopted to meet the needs of the pupil, in-line with the underpinning purpose of the model.

Prioritising pupils challenge-by-choice involvement will undoubtedly stretch teachers own professional abilities to work safely in outdoor situations. It is vital therefore that schools take a lead in establishing strong contacts with local outdoor organisations, groups and professionals. We see no reason why schools should not promote involvement with local outdoor clubs and groups in exactly the same way that they do so successfully with local youth theatre, music and arts groups. There is absolutely no reason why similar positive relationships cannot be developed with the Guides, Scouts, Prince's Trust and Duke of Edinburgh Award. Likewise, evolving the role of the LEA outdoor centre to become an outreach provider for schools should also be considered (Jackson, 2010; Kent, 2007).

We also recognise that expanding challenge by choice opportunities for pupils to be more involved in their own learning is impacted by teacher socialisation into adventurous activities and underpinned by the guidance and direction they receive as novice educators. Andrew et al. (2018) identified a controlling course environment and limited educational outcomes as key influences on the socialisation of preservice physical educators on an outdoor education field experience. Aligned to this Zmundy, Curtner-Smith, and Steffan (2009) and Maurer and Curtner-Smith (2019)

have considered the socialising influences that impact upon individual adventure educator practice highlighting in particular differences between inexperienced and expert adventure educator teachers. Increasing challenge by choice opportunities for pupils in school-based experiences represents a significant challenge to teacher education, school practice and parental expectations, yet it is fundamental to the authenticity of adventurous activities.

Managed risk (4/4)

The fourth non-negotiable feature of a pedagogical model for adventurous activities is that it should make use of *managed risk* as an educational tool. Managed risk undoubtedly presents the greatest challenge for a models-based approach to adventurous activities as it recognises there has to be an element of uncertainty over whether pupils can meet the challenge before them. Gill (2007) is one of many who have argued against the limiting impact of an increasingly risk-adverse and litigious society upon the education practices of schools, in which children are not encouraged to take risks or make decisions about personal safety because they have so little experience of the outdoors as a place to play and learn (Beames & Brown, 2016; Breivik, 2007; Priest, 1999). In response, the outdoor sector has witnessed the development of the National Governing Body Awards and licencing of adventurous activities providers that have gone some significant way of addressing the physical risks associated with outdoor activities. However, consideration of managed risk in a school context needs to move beyond the dualism of real—perceived/objective—subjective risk (Ball and Ball-King, 2011; Brown, 1999; McNamee, 2007). Rather, we would highlight a broader understanding of risk that is rarely considered but which may prove to be beneficial for a models-based approach. Brown and Fraser (2009) propose a broader understanding of risk to recognise social, emotional and psychological applications as equally relevant as physical risk. To a real extent recognising the multi-faceted nature of risk is a normal and expected part of a teacher's duty of care and provides a strong foundation on which to build. However, many physical education teachers acknowledge they are uncomfortable, worried and ill-prepared to teach pupils outside the classroom, drawing attention to their lack of knowledge and skills to teach adventurous activities (Brown, 2006; Dillon & Dickie, 2012; Sutherland, Stuhr, & Ahvaz, 2016). The most immediate short-term response that schools can make to this situation is to make better use of local providers, develop outreach relationships with an outdoor centre and to prioritise professional development opportunities linked to adventurous activities in the curriculum. In the medium to longer term, reform of teacher training is crucial (Kirk, 2010) in order to better prepare teachers with the skills, knowledge and strategies to support the delivery of adventurous activities in school contexts. To that end, we highlight two possibilities for the profession to work towards. In the medium term, physical education teacher training needs to be overhauled to recognise adventurous activities to be of equal importance to other aspects of the curriculum, such as creative and competitive activities in the preparation of future teachers. In the longer term, a reconsideration of the contribution of adventurous activities to the broader subject area of outdoor education, as separate and different from physical education (Dyment & Potter, 2015; Martin and McCullogh, 2011; Potter & Dyment, 2016), would open up the exciting possibility for specialist outdoor education teachers to be trained and employed in schools (Polley & Thomas, 2017). With or without these changes, we believe a clearer focus on effective learning outcomes as the main focus of a managed risk approach to adventurous activities would mean that teachers working in schools today, and in the immediate future, should not feel they are required to become highly qualified outdoor technicians overnight.

Advocating managed risk as a non-negotiable feature of a model for adventurous activities brings with it genuine tensions that will need to be resolved. From the teacher's perspective, it will require them to make informed risk-benefit decisions about the activities they introduce, as well as broadening their understanding of risk to encompass social and emotional as well as physical risk. It will also require negotiation with parents who may be uncomfortable with their child getting dirty, upset, cold, and maybe even scratched and bruised (but never beyond that) as part of their physical education experiences. Teachers still hold overall responsibility for pupils' safety and well-being; models-based

approaches to adventurous activities do not change that at all. They do however recognise that certain types of learning that society feels to be valuable for young people (such as teamwork, problem-solving, leadership and resilience) can only truly be achieved by experiencing the types of activities that best deliver that learning as evidenced by research. In a nutshell, if we want to young people to become resilient, independent and socially capable adults in their future lives we need to provide them with the opportunities to develop these qualities whilst at school, and the best way to achieve that is through adventurous activities.

Conclusion

This paper has presented a different approach to teaching of adventurous activities in the physical education curriculum in the UK. It draws upon a models-based approach to physical education that is premised on what the research evidence says about adventurous activities and what pupil learning outcomes can be expected from taking part. Four non-negotiable features of the model have been identified from the underpinning outdoor education literature as *mainly outdoors, experiential learning, challenge-by-choice* and *managed risk*. Consideration has been given to some of the key challenges that a models-based approach to adventurous activities presents for each non-negotiable feature, and a way forward suggested. We do not underestimate the challenges this will present for schools and teachers, however, we feel that without real change to the way adventurous activities are delivered and experienced it will never realise its full potential to contribute to pupils' learning, and at some point in the future it will be lost from the curriculum. A models-based approach presents the best opportunity to re-align adventurous activities with its core learning and to realise its full potential as an important aspect of the physical education curriculum. This should be available for all young people as part of their normal physical education classes and experienced regularly in and around the school grounds.

Disclosure statement

No potential conflict of interest was reported by the authors.

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