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Thinking differently about curriculum

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Thinking differently about curriculum: Analysing the potential contribution of physical education as part of ‘health and wellbeing’ during a time of revised curriculum ambitions in Scotland.

Abstract

Background

In many countries policy perspectives on the purposes of physical education are under pressure to reflect more obviously health and wellbeing and lifelong learning agendas. While this focus has often been associated with concerns about low physical activity participation levels and the rapid increase in the number of unfit and overweight children (Kirk, 2006), it has also been argued that this ‘narrow’ view of physical education’s role can be expanded. Thus, the current policy necessity is often for the greater integration of physical education with overarching ‘whole school’ curriculum and ‘whole student’ learning ambitions. Accordingly, the main aim of the paper is to review the prospects for physical education as part of ‘health and wellbeing’ during a major period of curriculum renewal in Scotland, with a particular focus on re-conceptualizing physical education for pupils between 11 and 14 years old.

Purpose

Following an explanation of the current policy context the paper addresses three particularly pressing challenges: the curriculum focus for physical education as part of health and wellbeing; the major implications for subject knowledge; and how translating curriculum change into professional learning and practice might feasibly occur. In analysing arguments associated with the intended curriculum focus we highlight the contrasting effects of curriculum prescription. These include times where lack of elaboration has hindered teachers in adequately grasping the scale and detail of curriculum ambitions sought and times where greater prescription has curtailed the rich diversity of experiences which are possible for pupils. In reviewing the implications for subject knowledge, the paper exemplifies how new developmental applications of change ideas could be implemented in physical education programmes in the early years of secondary schooling in ways which articulate

more coherently with health and wellbeing and lifelong learning agendas than previous curriculum arrangements. In discussing how to translate curriculum change into professional learning and practice we outline how recent advances in developmental physical education have informed academic-led interventions aimed at supporting teaching communities in their professional learning. These initiatives potentially overtake some of the inertia caused through the mixed message reporting contained in official policy documents.

Conclusion

Analysis of the three challenges highlighted has revealed a number of pressures on achieving sustained change in Scotland. While recognizing these pressures we are buoyed by noting the extent to which politicians and policy makers continue to recognize in qualitative terms the multi-faceted contribution of physical education to a balanced education; a position which, in effect, perceives physical education as being part of the policy solution rather than part of the policy problem. In building on this promising position, we have identified a number of key considerations about subject knowledge and pedagogical practices which require review if developmentally-informed interventions aimed at thinking differently about curriculum innovation for pupils aged 11-14 years are to be successful. In taking matters forward, we endorse the culture and cycle of experimentation and reflection which is emerging and encourage physical education teachers to continue to be active in intent in making the most of the policy opportunities which exist.

150 word practitioner summary

In many countries the purposes of physical education are becoming closely aligned with health and wellbeing and lifelong learning agendas. This change of emphasis has often arisen due to concerns about low participation levels and increases in the number of overweight children. Consequently, the main aim of the paper is to review the prospects for physical education as part of ‘health and wellbeing’ during a major period of curriculum renewal in Scotland. The paper analyses three key challenges: the curriculum focus for physical education as part of health and wellbeing; the major implications for subject knowledge; and how translating curriculum change into professional learning and practice might feasibly occur. With reference to specific developmentally-informed interventions which are underway, the paper outlines how the culture and cycle of experimentation and reflection which is emerging in Scotland can improve the quality and coherence of physical education programmes for pupils between 11-14 years.

Curriculum

Health and Wellbeing

Innovation

Physical Education

Introduction

Recent global physical education literature has articulated the need for changing existing curriculum content and associated pedagogical strategies (Penney & Chandler, 2000; Kirk & Kinchin, 2003; Rovengo, 2006). And while some authors have argued (Gard & Wright, 2005) that it is governmental fears of increased childhood obesity levels which most drives curriculum change there is often a contrasting acknowledgement that children nowadays are much more sophisticated in their relationships with health, wellbeing, and physical activity knowledges and practices (Kirk, 2004; Wright, 2004). One frequent upshot of these contrasting arguments is criticism of traditional curriculum models' ability to support children's lifelong physical activity and health engagements. Kirk (2004), for example, notes that the dominance of the 'blocked' model of curriculum planning has produced pupils whose physical education is limited by time spent reproducing specified knowledges drawn from abstracted elements of different sports. This approach often results in pupils receiving a series of behaviourist inclined learning experiences which are fragmented and de-contextualized. Consequently, few opportunities are provided for sustained and meaningful pupil engagement of a form which could enable a transfer of learning across a range of curriculum subjects and year levels.

By way of example, in Scotland, criticism exists of the routine ways in which activity-based programmes have been rolled out in secondary schools (12-18 years) and the developmental weaknesses and low levels of provision evident in primary schools (5-11 years) (Thorburn et al., 2009). However, the times when such provision was adequate to justify curriculum inclusion are at an apparent end. Recent policy announcements on the purposes of physical education requires pupils' learning experiences to become more contextualized within health and wellbeing and lifelong learning agendas (Learning and Teaching Scotland, 2009). Accordingly, the current period is one where the intended increased integration with whole school curriculum ambitions merits analysis from teachers, policy makers and academics alike as there is a policy opportunity for

physical education to become more centrally involved in the process of education renewal. In critiquing some of the key points of debate and contention which might most influence future curriculum prospects, we aim to highlight points that resonate with other countries worldwide where similar curriculum opportunities are being considered (Penney, 2007).

Our concerns for achieving sustained change in physical education are conceptually underpinned by the work of Michael Fullan. Specifically, we have focused on the core principles identified for achieving educational reform developed by Fullan. These principles have been extensively utilized by many in education (see, for example, Hopkins, 2001; Stoll et al., 2001) and within physical education (McDonald, 2004). In essence, Fullan (1993) argued that teachers' intentions to 'make a difference' required a change apparatus based on four core capacities. These capacities are: personal vision-building, inquiry, mastery, and collaboration. Vision-building is underpinned with the notion that teachers' personal motivation is the route to achieving deeper and more sustained change. Sharing a collective vision becomes important, but only when it reflects individual teachers examined and reexamined views. In short, 'we should not think of vision as something only for leaders' (Fullan, 1993, p. 13). Inquiry is considered as the requirement for teachers to continually analyse change agendas throughout their careers and to avoid viewing teaching as a static endeavour. Mastery is considered as the expertise necessary for teachers to become skilled in implementing new ideas as well as being persuaded by their merits. Mastery is best improved by career long professional development. Collaboration is framed around the notion that open mindedness is required if personal visions are going to link to a shared vision in implementing new curriculum ideas in the longer term. Collectively, Fullan's essential view is that individual teachers' vision of change will achieve little without adherence to these four core principles and that change without vision is merely change for change sake. Thus, what is required is a vision for change accompanied by structural mechanisms for achieving change.

However, while the current context in Scotland supports notions of educational change, bringing about change in physical education has consistently proved elusive (Penney & Chandler, 2000). One reason for limited success, we would suggest, is that the ever-growing knowledge base developed over the last twenty years on educational change (e.g. Fullan, 1993; Hargreaves & Shirley, 2010) has rarely been employed in physical education contexts. This is not altogether surprising as the focus of most change research has been on systemic or whole school change (Hargreaves & Shirley, 2010) with less emphasis placed on subject change. Consequently, change efforts in physical education have generally been uninformed in terms of ‘change knowledge’. Therefore, as we move into a new era of potential change in Scottish physical education, we believe that some of the key messages from the educational change literature should frame the current debate and help move efforts forward.

Curriculum renewal in Scotland

The new ‘Curriculum for Excellence’ (CfE) policy aims to achieve greater curriculum coherence through pupils developing four learning capacities. These are to become ‘successful learners’, ‘confident individuals’, ‘effective contributors’ and ‘responsible citizens’. Improved learning transfer is intended across the ages and stages of child development and between pre-school, primary and secondary schools (Scottish Executive, 2004b). This process has been evolving since 2002 when new devolutionary governmental powers were quickly seized upon as the Scottish legislature embarked on an extensive consultation exercise on the national state of school education (Thorburn & Jess, 2008). This debate confirmed that teaching was professionally conducted and provided a clear endorsement for a comprehensive rather than specialist model of schooling. Nevertheless, there were demands for a de-cluttering of curriculum and a greater educational connectedness between 3 and 18 years, with a personalized and holistic range of experiences supporting pupils learning and assessment. However, no major structural changes are planned. School education will continue to be dominated by two large sectors; primary schooling for pupils

between 5-11 years and secondary schooling, which lasts for all pupils until 16 years old. Currently, 60% opt to remain in full-time secondary schooling until 18 years old (Scottish Government, 2008). Since the announcement of the new policy aims, emphasis and attention has been on articulating how the four capacities can be developed through learning in specified curriculum areas. These include the relatively familiar areas of language, mathematics, science, expressive arts, social studies, technologies, religious and moral education along with the new disciplinary area of health and well-being. Furthermore, in three particular areas (literacy, numeracy and health and well-being) the interdisciplinary nature of learning is one where the policy aspiration is that every teacher has a responsibility in these areas (Learning and Teaching Scotland, 2009). In all of this, the boundaries between the end of primary schooling (age 11) and age 14 when pupils choose more defined 'subject-based' national examinations in secondary schools is a key stage during which programmes require to be coherent and progressive, and articulate clearly with the outcomes and experiences defined within CfE. We therefore intend to focus on this age group and concur with other writers (e.g. Locke, 1992; Kirk, 2009) on the particular importance of re-conceptualizing physical education at this age and stage of child development.

Physical education, health and well-being and a curriculum for excellence

The enhanced policy position of health and wellbeing reflects the policy expectation that it is essential to recognize physical education's contribution to a greater extent than previously as the subject 'is an area of the curriculum which, exceptionally, needs greater priority to support the health and well-being of young people in Scotland' (Scottish Executive, 2004c, p. 1). Thus, the politically-driven policy process has insisted that the centrality of physical education to a balanced education is recognized for its health and wellbeing contribution and for its capacity to be a key influence in achieving the cultural change of attitude towards healthy living which is required. This has occurred despite policy ambitions generally advocating an increase in school-based decision-making. The predominant health focus arose out of concerns about low participation levels, for

example, the Scottish Health Survey (Scottish Executive, 2003) reported that children's participation rates in physical activity were beginning to decline as early as age four and by the time girls reach their teens only 35% reach the recommended levels of physical activity. High quality physical education programmes are considered as having the capacity to make a positive difference in improving attitudes towards active participation (Scottish Executive, 2004a). Following a period of consultation, the final experiences and outcomes for health and wellbeing were announced in April 2009. Thus, within a relatively short period, physical education has moved from having a stable but rather peripheral curriculum role to occupying a position as the pivotal component of health and wellbeing. This position is supported by a Scottish Government pledge to double curriculum time in physical education to a minimum of two hours per week (Thorburn, 2010); the only specified timetable requirement which exists within the entirety of CfE.

In critically analysing the potential contribution of physical education within health and wellbeing, three particularly pressing challenges present themselves. These are the:

- curriculum focus for physical education as part of health and wellbeing
- major implications for subject knowledge in physical education
- translating curriculum change into professional learning and practice

In setting out our analysis and discussion, we recognize, as well, the necessity of acknowledging a familiar policy dilemma; namely that tensions can arise between policy makers at national level and teachers at a school level. The possibility of 'slippage' in implementing policy is a common problem, which important writers in the sociology of education have considered in depth (Ball, 2008). Bernstein (1990), for example, in his work on the social construction of pedagogic discourse explored the extent to which the re-contextualizing of policy (i.e. policy at national level) and the reproduction of policy (i.e. policy at the secondary level in schools) tends to lead to compromises in

the ways that policies are enacted. This often results in the solutions arrived at not being the ones which were necessarily intended. In Scotland, during the development of physical education examination awards in the 1990s, MacPhail (2007, p. 57) argued that the ‘relationship between agents in the recontextualising field and secondary field was very much one-way, with many individual teachers asking for more clarity from external agencies as to what and how they should be teaching.’ However, the policy apparatus for tackling these problems was largely absent through a lack of providers being available to offer the support required (Brewer, 2003).

In order to avoid a repeat of past problems, academics from the University of Edinburgh have spent the last decade, with increasing assistance from central government, trying to provide a revised conception of physical education together with enhanced opportunities for professional learning. Accordingly, the aims of the Developmental Physical Education Group (DPEG) have been to articulate and refine key principles which inform curriculum, pedagogy and professional learning change and development efforts (Thorburn et al., 2009). Four learning principles have become the foundation of this work and have provided a clear direction to our change efforts (Jess et al., in press). These principles emphasize that physical education provision should provide learning experiences that are:

- developmentally appropriate by focusing on learning across the psychomotor, cognitive, social and emotional domains;
- inclusive, so that all have the opportunity to learn and benefit;
- connected to ensure coherent learning experiences within physical education and across the school curriculum;
- lifewide, as learning does not only take place within the bounds of the school but across all the different sectors of a child’s life.

In line with these principles, the DPEG's original curriculum and pedagogy endeavors focused on the early years of schooling with the development of the Basic Moves Programme (Jess & Collins, 2003) and later, as will be discussed, on covering the 3-14 age range. Over time, an emergent focus of the DPEG's work has been on providing professional development programmes which exemplify how new teaching and learning interventions articulate clearly with policy aspirations. Furthermore, a criticism of previous large scale curriculum reforms in the senior secondary school in the 1990s was that they were considered by some as predominantly a technical exercise underpinned by 'a philosophical vacuum' (Humes & Bryce, 2003, p. 118). Consequently, the DPEG has also analysed, in detail, the conceptual basis of arguments endorsing CfE. Thus, threaded through this paper are discussions about how the DPEG has been involved, both conceptually and pragmatically, in thinking differently about physical education curriculum.

The curriculum focus within physical education as part of health and wellbeing

In sympathy with other countries, where similar learning capacities are intended to be developed e.g. in England (Department of Children, Schools and Families, 2009) and New Zealand (2007), policy intentions in Scotland centre on connecting physical education with health and wellbeing to a greater extent than previously. Two areas of development reflect these intentions: firstly, through achieving generic targets which involve all teachers effectively integrating mental, emotional, social and physical wellbeing into their overall teaching and secondly by meeting subject-specific targets in physical education, physical activity and sport.

In the first area of development, under 'mental and emotional wellbeing', nine first person 'I' statements outline the 'feelings', 'thoughts' and 'skills and strategies' which pupils should understand in order to learn and manage their wellbeing through, for example, improving coping skills and developing positive relationships. The notion of learning and managing continues in six 'social wellbeing' statements, where the importance of pupils' views, entitlements and opportunities

are described. By contrast, the four statements accompanying ‘physical wellbeing’ are rather inert and lacking in integration with the others three (mental, social and emotional) areas of wellbeing. The four statements focus on ‘understanding of the human body’, ‘assessing and managing risk’, ‘keeping myself and others safe’ and ‘traveling safely’. The intended overarching theme of learning and managing through feelings, thoughts and impressions which are driven by a first person experiential-based ontology are poorly reflected in these statements. The reliance on safety coupled with a brief elaboration about understanding of the body limits the connections possible with the other areas of wellbeing and within physical wellbeing itself. Accordingly, quite how to convey in a more vivid form the possibilities of the physical body to contribute to pupils’ health and wellbeing requires greater thinking than has occurred to date. We note similar issues in England, where a separate focus on physical wellbeing relative to social and environmental understanding is proposed (Department of Children, Schools and Families, 2009).

Issues about modest elaboration and clarity of purpose exist as well under ‘physical education, physical activity and sport’. Consequently, there is some unease about whether physical education change has been clearly articulated relative to some of the areas of development expected, or whether changes are really about curriculum labeling rather than changes in curriculum substance. Under previous arrangements, achieving coherence required articulation with the 5-14 national guidelines for the Expressive Arts (Scottish Office Education Department, 1992) rather than through dovetailing with curriculum imperatives in health and wellbeing. Yet, scrutiny of the respective outcomes and experiences reveals less change in subject emphasis than might have been expected given the changes in policy perspective intended. Of the six areas of development outlined in the national guidelines for the Expressive Arts, outcomes relating to ‘movement skills, competencies and capacities’, ‘cooperation and competition’ and ‘evaluation and appreciation’ have broadly similar outcomes in CfE (Table 1). For the remaining two Expressive Arts outcomes, the outcome relating to ‘investigating and developing fitness’ equates now to an outcome statement

within ‘physical activity and sport’ rather than ‘physical education’ and the outcome relating to ‘creating and designing’ articulates with a similar outcome statement from the ‘Dance’ component of the new Expressive Arts arrangements in CfE (Table 1).

Enter Table 1 close to here

Fullan (1993) highlights that vision-building requires a continual reworking of ideas if the purposes of change are to become explicit. If this occurs further policy slippage can be avoided and more made of the platform of opportunity which exists at present for physical education. The similarities between successive curriculum arrangements, suggests that the curriculum opportunities which exist under CfE might not be being exploited to their fullest potential. As Thorburn (2010) notes, the rather opaque nature of the Expressive Arts guidelines was, in part, responsible for some of the delays in implementation which occurred. Perhaps, as well, it highlights a lack of boldness in recognizing the plurality of what constitutes physical education and of the difficulty there is in neatly framing curriculum arrangements which enable holistic learning approaches to be adopted. For example, there may be some unease about how the separation of dance and physical education outcomes is interpreted by teachers, even though the policy position remains one where connections between the two are still advised (Learning and Teaching Scotland, 2009). Thus, we recommend that these challenges are more overtly recognized with an acceptance that definitions of physical education should not be unduly constrained by curriculum implementation measures which can potentially distort the accepted purposes and contributions of long established subjects.

However, the Inspectorate service (Her Majesty’s Inspectorate of Education, 2008) offers some insights into the type of curriculum and pedagogical improvements that require greater prominence. It is advocated that for the ‘successful development of learners’ that teaching will need to rise above the limitations of only offering ‘opportunities for physical activity and recreation’. Thereafter, to

assist pupils in becoming more ‘effective contributors’, ‘pupils’ practical understanding of the principles underpinning performance needs emphasized’ rather ‘than simply the technical details of skills development’. To ‘improve the confidence’ of pupils it is intended that learning experiences are ‘imaginative, creative, stimulating and challenging’ and to encourage pupils to become more ‘responsible citizens’ it is advised that activities which ‘inadvertently exclude some groups or pupils’ are omitted from programmes and that activities which are more inclusive in nature are provided.

In recognition of the overall scale of the curriculum challenges involved, our later DPEG informed explanation in this paper attempts to illuminate how pupils can be provided with opportunities to understand the principals underpinning performance in ways which are imaginative, creative, stimulating, challenging and inclusive. However, more immediately, from a CfE perspective it is important to indicate how the principles underpinning the DPEG’s work not only articulate with the key attributes embedded in the four overarching capacities but connect feasibly with the generic mental, emotional, social and physical outcomes in health and wellbeing. Thus, the DPEG’s vision for change proposes that physical education and physical wellbeing are not considered as inert, stand alone ‘add-ons’ but as key integrated features of the new curriculum. In addition, by highlighting the need to connect with other areas of the curriculum and with lifewide activities outside the school, these principles not only acknowledge the important role physical education plays in relation to a range of physical activity, sport, health and dance learning outcomes but also articulates feasibly with the less physically-oriented, cognitive curriculum areas of literacy and numeracy to which every teacher has a responsibility under CfE.

However, given the increased political influence on policy which exist nowadays (Humes, 2008) there are further conceptual and policy related issues to review when analysing the curriculum focus within physical education as part of CfE. Of specific importance is noting that the outcome most

clearly linked to ‘energetic physical activities’ (Table 1) is now part of ‘physical activity and sport’ and not ‘physical education’. Such a move (deliberately or otherwise) reflects academic cautioning that high quality learning in physical education should not be confused with lower quality physical fitness supplements (Penney, 2008). Yet, crucially (and the point can hardly be overemphasized in the midst of a severe global economic downturn) politicians might consider that additional investment in physical education will create a less obese and more physically active population, a higher proportion of whom are available for work and less of a burden on support services (Gard & Wright, 2005). Therefore, there is some urgency needed by physical educationalists in explaining how investment in high quality programmes is justified in educational rather than purely physical activity terms. This is likely to be an important matter when arguing that employing teachers (rather than say fitness instructors) is required. Recognizing that the target of introducing two hours of high quality physical education per week has only been achieved in less than 10% of secondary schools (Audit Scotland, 2008) only serves to highlight the extent of the challenges which remain.

In working towards making improvements there is a need to acknowledge as well that concerns about the relative value of physical education are widely held in the education profession. Barrow (2008, pp. 274-275), for example, in a preliminary discussion of education and the body argues from a rationalist perspective that:

Faced with limited resources, for example, a case might be made for appointing a history teacher rather than a physical education teacher. For it is at least arguable that in practice most children will not receive an education without the formal apparatus of schooling, whereas bodily fitness, bodily participation in sport and the like could be relatively easily attained and maintained with or without a school system.

We are skeptical however about how policy intentions for the 11-14 year old age group could be achieved without a school system when there is a policy expectation that pupils will through ‘new challenges and contexts for learning’ be expected to demonstrate an ‘ability to select, adapt and apply movement skills and strategies creatively, accurately and with control’ (Learning and Teaching Scotland, 2009). Thus, we would advocate that a more coherent vision of what it means to be physically educated is taken forward so that learner centered developments do not become compromised due to a relatively narrow focus being adopted when CfE is implemented. In this respect, the increased focus on motor competence and confidence in primary age pupils (Jess et al., 2007a) and the opportunity for students to utilize a language of performance which is driven by students’ own learning experiences in senior secondary school awards (Thorburn, 2008) can be viewed as productive developments in creating high quality definitions of physical education in Scotland. However, clearly there is a continuing need not only to express a coherent and connected vision for the future but to develop resources and provide professional learning opportunities which enable excellence in teaching to accompany newly formed ideas.

Overall, in reviewing the planned CfE curriculum focus, we consider that some of the complexities associated with pursuing holistically informed curriculum intentions require to be critically considered further, especially in terms of how the process of change can most effectively occur. What is particularly evident, so far, is that curriculum prescription can have contrasting effects. At times, lack of elaboration has come up short in helping teachers adequately grasp overall curriculum ambitions (Thorburn, 2010) while more detailed prescription can also distort the rich diversity of experiences which might have otherwise occurred rendering learning ‘predictable, limited and uncreative’ (Priestley & Humes, 2010, p. 15).

The major implications for subject knowledge in physical education

The general intention to achieve holistic, integrated and pupil centered learning outcomes has already triggered a reaction from some educationalists who are concerned about the demise of subject knowledge and the vagueness about how precisely learning will be organized and national standards of attainment maintained. For example, Woodhead (2009) has claimed that CfE is built upon ‘hopelessly utopian goals’ where agendas for making learning, active, personalized and enjoyable obfuscate the primary importance of subject knowledge in teaching. In this respect, Inspectorate guidance that physical education should not become overly recreational, but should promote instead learning which is more explanatory with regards to the principles underpinning performance, more imaginative and more inclusive is helpful in considering potential changes in the nature of subject knowledge (Her Majesty’s Inspectorate of Education, 2008). In thinking differently about curriculum, we also shortly offer some suggestions which have implications for subject knowledge.

However, for the present, we flag up two potential barriers to progress which might make it more difficult to achieve clarity about the purposes of subject knowledge under CfE. Firstly, the management of physical education is likely to be influenced by the gradual replacement of subject-based Principal Teacher (Head of Department) posts. Schools now increasingly adopt a faculty management system with Principal Teacher posts created according to the nine identified curriculum areas of CfE. Despite the possible whole school merits of adopting this approach there remains unease about how precisely new physical education ideas can become widely known about under these new leadership and managerial arrangements. Fullan (1993) notes that small-scale collaborations often work best when productive mentoring, peer relationships and team building strategies are adopted, however this might be more difficult to utilise under the new faculty arrangements proposed. Consequently, we are concerned in the circumstances about the ad hoc and variable ways in which some teachers might take part in discussions about best practice.

Secondly, the focus in schools to date has been on ‘successful learning’ relative to the other three capacities (Hayward, 2007). For the situation to change there is a need for subjects (or curriculum areas) to design and implement learning opportunities which can authentically capture the essence of all the capacities in ways which are not stifled by contrived learning experiences or by the assessment process. Potentially, we consider that physical education lessons are well suited to achieving these aims by moving beyond a technical skills focus to carefully reviewing how learning environments are constructed. Thereafter, follow up discussion, debate and evaluation would focus on the extent to which pupils were presented with a range of learning opportunities which collectively made a greater contribution to their overall education. Pursuing such inquiry is necessary, as there is only relatively modest evidence of physical education teachers in Scotland realizing this type of potential to date (Gray, 2009), it is important that the DPEG can exemplify how appropriately constructed physical education programmes would meet pupils’ needs as well as articulate with the health and wellbeing agenda planned for pupils of 11-14 years.

As noted earlier, from a curriculum and pedagogy development perspective, initial DPEG conceptual work focused on early years learning across the different domains of learning and of learning which was inclusive for all pupils and connected with learning experiences in and beyond schools (Jess & Collins, 2003). This orientation sought a change in focus from a technical mastery of skills to the mastery of more mature movement patterns which are underpinned by more complex notions of self-organisation and emergence which recognize the importance of adaptability and creativity in movement learning. This change has far reaching implications for the dominant performance-oriented curriculum with its accompanying behaviourist inclined pedagogical approaches. The current priority is to design interventions which indicate how core learning (i.e. learning which focuses on learning across psychomotor, cognitive, social and emotional domains) and assessment practices can be delivered in an integrated rather than piecemeal fashion, in ways

which articulate with the outcomes of CfE and with overarching lifelong physical activity dimensions (Penney & Jess, 2004).

Consequently, in building on the extensive work in preschool and infant school settings (Jess, et al., 2004), the DPEG's upper primary and early secondary efforts have increasingly focused on creating curriculum experiences which develop the core psychomotor skills, thinking skills, interpersonal skills and emotional learning which helps children effectively engage with the more complex physical education contexts they experience as they get older (Figure 1). Although aspects of core learning are included in some policies recommending the traditional multi-activity curriculum model, we argue that the fragmented and compartmentalized nature of this approach results in key aspects of core learning being marginalized as attention is concentrated on the specific (usually psychomotor) application of skills in different activities. Accordingly, to ensure core learning is used to effectively scaffold pupil's learning we have divided physical education contexts into two specific but related categories: developmental applications and authentic applications.

Developmental applications have similarities to the traditional multi-activity 'blocks', but, in this instance, are employed to apply aspects of core learning in broad physical activity contexts e.g. games, dance, gymnastics etc, and also to prepare pupils for the more specific authentic applications which seek to offer situated 'real life' experiences. These authentic applications, which are underpinned by social constructivist and situated learning concepts (Rovegno, 2006), are timetabled for similar periods of curriculum time as those typically associated with Sport Education (Siedentop, 1995). In addition, provision has diversified to include Dance Education (Irvine, 2008) and Outdoor Journeys (Beames & Atencio, 2008). At a broader level, attempts to consider Physical Activity Education as an authentic application which seeks to synthesize core and application learning within a more general functional, health, performance, recreational and supporting physical activity context that prepares children for physical activity participation over their lifespan (Penney & Jess, 2004) have also begun.

[Enter Figure 1 close to here]

However, with physical education continuing to be dominated by the multi-activity model in Scotland (Thorburn et al., 2009) it is not surprising that efforts to implement a developmental curriculum model have been problematic as fundamental issues are raised which challenge the short block timetable structure and traditional behaviourist teaching approaches. From a pedagogy perspective, by highlighting the need to use core learning in situated, ‘real life’ contexts, the developmental model encourages teachers to shift from a narrow ‘pedagogy of certainty’ to a more open ‘pedagogy of emergence’ (Jess et al., in press) which recognizes the importance of sharing learning intentions, physical tasks with a non-psychomotor focus, collaborative learning, problem solving, peer teaching and independent working. Feedback from primary teachers attending the new postgraduate certificate in 3-14 physical education programme, suggests a liberating (vision-building) effect as it has enabled teachers to connect physical education experiences more easily with other areas of the whole school curriculum. Specialist physical education teachers, on the other hand, are finding the transition more challenging as the traditional ‘short block’ curriculum structure favoured in secondary schools has made it difficult to move beyond a focus on specific activities. In particular, the perceived necessity to ‘cover’ set psychomotor skills is an inhibiting factor in creating new curriculum opportunities and in empowering new local communities of practice to design bespoke solutions to their identified needs. We recognize Fullan’s (1993) concern that developing learning and mastery in new curriculum innovations can induce anxiety in teachers. Thus, while the proposed developmental approach is making inroads in primary schools, the DPEG now has the challenge of developing and presenting a cogent case to secondary colleagues and, as we are doing in primary schools, putting in place professional learning support mechanisms to combat the actual and perceived issues which can limit the change process.

Translating curriculum change into professional learning and practice

In recent years, the policy of teachers being responsible for implementing new curriculum guidelines while retaining accountability for their effective introduction has led to frequent delays, as programmes of study have often become bogged down in procedural detail (Thorburn, 2010).

CfE begins in August 2010, after being twice delayed, each time for a year. Therefore, early in its development, DPEG recognized the potential problems of a conceptual drive for change failing to adequately provide exemplifications of the change process in action; and of the consequent delays in the transfer of curriculum ownership from policy makers to teachers which would result.

Accordingly, DPEG sought to construct a range of opportunities for the policy, academic and teaching communities to work closely together when thinking differently about curriculum for ages 11-14, and in so doing to reinforce Fullan's (1993) theorizing that teachers need one another to learn from in order to progress.

In parallel with these curricular and pedagogical efforts has been the provision of several sustained professional development opportunities. Since the introduction of developmentally-informed programmes in physical education in 2001, this has involved establishing a number of localised 'communities of practice' projects (Lave & Wenger, 1991) which are designed to support the professional development of individual teachers and the emergence of early years, upper primary, and early secondary physical education as an integrated and essential professional endeavour (Jess et al., 2007b). In addition, the DPEG has recognised the importance of providing collaborative structures which allow teachers to share knowledge, beliefs, and practices (Keay, 2006). Arguably, these professional learning communities dovetail with the collaborative and lifelong learning principles underpinning CfE.

Further support has also come from the Scottish Government who commissioned the introduction of a postgraduate certificate in 3-14 physical education. With over 300 primary teachers registered on

this programme, and with these teachers increasingly adopting leadership roles in their schools and local authorities, developmental physical education curriculum are becoming firmly established in schools. In addition, the curriculum and pedagogy principles informing the 3-14 programme have recently become a supporting cornerstone of the largest undergraduate physical education degree programme in Scotland. As such, the next few years will see the DPEG project becoming increasingly engaged with discussions directed towards the secondary years and transitions to adulthood and with associated issues about how developmental programmes can become self sustaining in and beyond schools. These intentions reflect Fullan's (1993) critique that larger scale collaborations require schools to work in partnerships with other schools in their community and within unitary authorities. Of particular importance in relation to the aims of this paper, is how the different communities of practice experiment with ways in which core learning and authentic assessment practices can become deeply embedded within everyday practice. In time, it is anticipated that emerging findings from the DPEG project could enable a self sustaining and shared vision-building agenda to be taken forward.

Conclusion

This paper has attempted to take ahead three pressing challenges in Scottish physical education. These were the curriculum focus within the subject, the major implications for subject knowledge and explaining how translating curriculum change into professional learning and practice might occur. Analysis of current policy and curriculum contexts has revealed a number of pressures on sustaining change. With reference to earlier theorizing by Fullan (1993) on the four core capacities for achieving lasting reform (personal vision-building, inquiry, mastery and collaboration) our analysis supports the belief that teachers' motivation is a vital part of vision-building. We suggest therefore that new thinking should genuinely reflect a 'collective narrative' (Ozga, 2005, p. 212) rather than a policy narrative based on official policy documentation alone. Accordingly, we have identified a number of key considerations which merit review if integration between areas of health

and well-being and physical education is to occur in deeply embedded and sustainable ways. In this respect, there is pleasing evidence that the process of change has recently been aided by national interventions where the policy, academic and teaching communities have worked closely together in thinking differently about curriculum for pupils between 11-14 years and of more precisely inquiring into what it means to be physically educated. Such open mindedness, we argue, is crucial if the collaborative culture and cycle of experimentation and reflection is going to continue in future years, as reviewing changes in subject knowledge and pedagogical practices in secondary schools, in particular, is required. This form of engagement with change agendas increases the likelihood of teachers seeking out and participating in professional development opportunities which help them to become skilled in mastering new teaching ideas rather than just familiar with them. However, achieving sustained change is rarely straightforward. Thus, we intend to further theorize our work on curriculum change in order to progress our understanding of how structural support can enable greater capacity building to occur. For the present however the core capacities identified by Fullan (1993) for achieving sustained change has proved a useful and worthwhile entry point for our analysis.

For the present, politicians and policy makers continue to consider that the practices of physical education are a major part of the policy solution rather than a major part of the policy problem. This is clearly good news. However, the situation could change quickly. Consequently, it is important that physical education does not become detached in policy and practice terms from Scottish Governments commitments to achieve a range of health, education and sporting targets, but remains at the forefront of high quality definitions of professionalism. Thus, CfE presents a genuine policy opportunity, which to a large extent reflects the confidence of a new Scotland in devising pupil centered whole school curriculum which can transform lives, improve social justice and eradicate previous barriers to learning. In this environment, it would be helpful if physical education teachers

were 'activist' in nature and intention, in trying to capitalize on the policy opportunities which currently exist.

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