

New Research Programmes in Physical Education and Sport Pedagogy

David Kirk, University of Bedfordshire and University of Queensland (Corresponding author)

Leen Haerens, Ghent University

Institute for Sport and Physical Activity Research
University of Bedfordshire
Polhill Avenue
Bedford MK41 9EA
David.Kirk@beds.ac.uk

Abstract

During the past decades significant progress has been made in the development of physical education and sport pedagogy research with the field reaching a level of maturity and critical mass. In light of this development, it seems worthwhile to take an overarching view on existing evidence in order to identify a number of emerging challenges that researchers in physical education and sport pedagogy might want to address in future studies. We argue that there is an emerging consensus (in the English-language research community) that pedagogy is the proper object of study of educational research in physical education and sport, confirmed by the increasing prevalence of studies that explore relations between the components of teachers, teaching and teacher education, curriculum, and learners and learning. At the same time, and despite evidence of development, we acknowledge that compared with other Kinesiology fields, physical education and sport pedagogy research has lacked influence and impact. In the present contribution, three features of future research in physical education and sport pedagogy are considered: practice-referenced research, a programmatic approach, and interdisciplinary research. We conclude that strong leadership will be required to facilitate a future agenda, and that PESP researcher may need to begin to scale up their work and publish it in a wider range of educational research journals.

Keywords

Research programmes; physical education and sport pedagogy; practiced-referenced research; relationality; interdisciplinarity

Introduction

Research in physical education and sport pedagogy (PESP) has experienced substantial growth in the past two decades. The longevity of the *Journal of Teaching in Physical Education* (now in its 32th volume), and the emergence of *Research Quarterly for Exercise and Sport* (pedagogy section), *European Physical Education Review*, *Quest*, *Physical Education and Sport Pedagogy* and *Sport, Education and Society* as genuine alternative outlets to *JTPE* for the publication of high quality educational research serve as an evidence to this growth. The Sage *Handbook of Physical Education* (Kirk, Macdonald, & O'Sullivan, 2006) represents, in our opinion, a substantial landmark for the field, showing in 45 chapters the state of the art and the strength and depth of research in curriculum, teaching, and learning and related pedagogical topics. The chapter authors included scholars from Spain, France, Cyprus, Francophone and Flemish Belgium, Francophone and Anglophone Canada, Australia, New Zealand, the UK and the US. Increasing numbers of annual and biennial conferences run by organisations such as the Australian Association for Research in Education, the American Educational Research Association, the *Association Internationale des Ecoles Supérieur d'Education Physique*, the *Association pour le Recherche sur l'Intervention en Sport* and the British Educational Research Association are attended regularly by researchers from a number of countries. All of this evidence points to the fact that the numbers of active researchers in the field is increasing, and many more have doctoral qualifications now than say 30 years ago. So the physical education and sport pedagogy research field is thriving. These developments also suggest that the field may be reaching a level of maturity and critical mass.

At the same time, the scale of research in PESP is small relative to many of the other sub-disciplines of Kinesiology, and its impact on Public Health and educational and sport policy and practice is limited. In contrast to the influence research on sport, health-related exercise, and active leisure has had in the past, research in PESP appears to be less often cited and maybe also had less impact in the field of school physical education and sport more broadly.

Given these apparent contradictions, between substantial growth in the research field of PESP and limited impact on policy and practice, we believe it is timely to address the question of future research in PESP. In this paper, we ask first whether the emerging critical mass of researchers is providing a consensus on the field's proper object of study – in other words, is the field of research growing in a way that allows us to make a unique and distinctive contribution to advancing knowledge? We note the increasing numbers of studies that explore the relationships between for example teaching, curriculum and learning and the specific contexts in which they are practiced, exemplified for us by a models-based approach to physical education (Casey, 2013) and the Francophone tradition of *didactique* (Amade-Escot, 2007). We propose that acknowledgement of this relational approach as a complex, dynamic system confirms pedagogy as the proper object of study in the field, and furthermore relates to three additional features of future research, which are considered briefly, practice-referenced research, a programmatic approach, and interdisciplinary research. We conclude with a comment on the need for strong leadership from organisations and institutions to facilitate the development of this future research agenda for physical education and sport pedagogy.

A consensus on 'pedagogy' as the proper object of study

We suggest that there is an emerging consensus on the proper object of study in the field of educational research in physical education and sport, which Kirk, Macdonald and O'Sullivan (2006) argue is pedagogy. Armour (2011) noted that the term 'sport pedagogy' is complex, lying as it does at the intersection of the contested concepts of sport and education, and argues for a definition that includes the three interdependent and interacting dimensions of knowledge (or curriculum), learners and learning and teachers/ teaching and coaches/ coaching.

As various lines of research have developed around teaching, curriculum and learning, the notion of pedagogy has taken shape. The earliest research in the field, emanating particularly from the US from the 1960s on, took teachers, teaching and teacher education as its primary focus. Much of this research was informed by the behavioural sciences (Ward, 2006; Van der Mars, 2006). In the 1970s and early 1980s, Ann Jewett's humanities-influenced research added an interest in the curriculum process in physical education (Jewett & Bain, 1985), followed by further, more sociologically-inclined research on curriculum development (Macdonald, 2003), curriculum change (Sparkes, 1991) and historical research on the curriculum (curriculum history, e.g. Kirk, 1992).

From the 1990s on, we have seen increasing attention paid to learners and learning, including learner cognition (Solmon, 2006), learners' motivation (Haerens, Kirk, Cardon, De Bourdeaudhuij, & Vansteenkiste, 2010; Aelterman et al, 2012), students' perspectives (Dyson, 2006) and student-centred interventions (Oliver, Hamzeh and McCaughtry, 2009), studies which have drawn on a range of psycho-social theories of learning. More recent still

there has been growth in research that has focused on the relations between two or more dimensions of pedagogy, which offers, for us, confirmation of the consolidation of the field around the concept of pedagogy. This 'relational' research has taken a number of forms, and deals with a range of topics (eg. see Cardon, Haerens, Verstraete, & De Bourdeauhuij, 2009; Seghers, de Martelaer, & Cardon, 2009; Redelius, Fagrell, & Larsson, 2009).

Notwithstanding the diversity of this research, we suggest the exploration of relationships between dimensions of pedagogy and how each interacts with each other has profound implications for future directions. It suggests, first, that a consensus is emerging around pedagogy as the proper object of study in the field. And second, this focus on pedagogy proposes a field of research with particular features. In addition to its relationality, we suggest the focus on pedagogy will also increasingly require research that is practice-referenced, programmatic and inter-disciplinary. In the next part of this paper we will consider each of these four features of the future research field in sport pedagogy in turn.

Relational research

Since pedagogy includes three interdependent dimensions, changes in one affect each of the others, and each of these interactions takes place in specific local contexts. Although all three are interrelated, not all studies need to focus on investigating all three components simultaneously. Indeed, strong evidence can also be generated through experimental designs in which only one aspect of one dimension is varied across conditions (e.g. the way feedback is delivered varies across conditions). When experimentally varying one aspect of pedagogy (curriculum content), we will always take into account those dimensions that were held constant across conditions (e.g. teaching). More specifically, we argue that for

studies to move the field forward, all dimensions of pedagogy should be described or controlled for. For instance, if we investigate how a lesson topic (curriculum) relates to pupils' intention to become active in leisure time (learning), researchers should at least control, take into account or describe how lessons are taught across topics (teaching). This is because, if teachers are acting differently across lesson topics, it might not be the lesson topic in itself that relates to differences in learning, but rather the way the lessons are implemented. This example illustrates pedagogy as a dynamical system and points towards the complexity of providing strong pedagogical evidence that is also ecologically valid, because many different variables relating to teaching, learning and curriculum come into play.

In relational studies to date there is often no explicit theoretical pedagogical perspective informing this work (with two exceptions); that is to say, the relational character of the work is present, but it is not theorised. Research programs that manage to theorize and integrate all three dimensions of teaching, curriculum and learning in context are therefore of great value both in terms of high quality research, as well as to facilitate the development of good practice. The exceptions are two specific forms of relational research in physical education and sport, which rest on explicit theories that require the study of relations between components of pedagogy. These are the Anglophone research on models-based practice (MBP) (Jewett, Bain, and Ennis, 1995; Metzler, 2005), and the Francophone tradition of *didactique* (Amade-Escot, 2007).

As a strategic approach to physical education, MBP seeks to align teaching, curriculum and learning in ways that take account of the setting or *milieu*. Pedagogical models such as

Teaching Games for Understanding (e.g. Bunker & Thorpe, 1983), Sport Education (e.g. Siedentop, 1998) and the recently developed Health Based Physical Education Model (Haerens, Kirk, Cardon, & De Bourdeaudhuij, 2011), feature, as 'hard-wired' aspects of their design, the interdependency of teaching, curriculum and learning. In Metzler's (2005) terms, it is the relations between the dimensions that become the *organising centre* for pedagogy, rather than any one of the dimensions by itself. Indeed, Metzler (2005) developed benchmarks for teachers and pupils to provide a means of checking that a particular model is being practised faithfully, and that all three dimensions remain aligned during a unit of work.

While it has developed within a separate research tradition, the Francophone *didactique* has much in common with MBP in terms of the focus on the relations between the dimensions of pedagogy. The majority of this research has been published only in French (Amade-Escot, 2007). Increasingly, however, *didactique* research in physical education is being published in English. Amade-Escot (2006) has provided an English-language overview of this research in physical education, and also co-edited with O'Sullivan a special issue of the journal *Physical Education and Sport Pedagogy* on theoretical perspectives on content (curriculum), in which several *didactique* studies were published. One North American study, interestingly, brings MBP and *didactique* together (Wallhead & O'Sullivan, 2007), and also includes two studies by French authors (Verschuere & Amade-Escot, 2007; Wallian & Chang, 2007). Grehaigne, Wallian & Godbout (2005) have further developed the coming together of MBP and *didactique* through their work on team invasion games, while other studies have contributed to the theoretical development of relational research from the perspective of

the French 'course of action' socio-cognitive model (eg. Guillou & Durny, 2008; for an overview, see Musard & Poggi, 2013).

We think the accumulation of scientifically sound knowledge on relations between curriculum, teaching and learning through strong (quasi-) experimental designs, together with relational studies adopting a models-based approach in physical education and sport pedagogy will provide both more powerful evidence of what works, and effective means of informing practice. In addition, through implementing MBP, avenues for practice to inform research are developed. This is because MBP studies seek to understand the complex, dynamic nature of pedagogy and to provide more adequate (than formerly) representations of practice through this research.

Practice-referenced research

The varying fortunes of school physical education seem to be out of step with the apparently high public profile of the three 'legitimizing publics' (Williams, 1985) of sport, health-related exercise, and active leisure, which together construct and constitute physical culture (Kirk, 2010). One explanation for school physical education being out of step with contemporary physical culture may be that day-to-day classroom practice has not changed significantly since the 1960s, and where there have been curriculum development initiatives, they have tended not often to be informed by research (Ives, 2013). Despite substantial investment in school physical education and sport in England for over a decade which included funded evaluation studies, even in this case research appears to have had little or no influence on policy or practice (Jung, 2013). Nor has research appeared to influence in any profound sense the practice of physical education teacher education (PETE).

Also, school physical education fails to realise its *raison d'être* for inclusion in the school curriculum, which is lifelong participation in physically active lifestyles (Kirk, 2002).

To illustrate by just one example, it is well-established that the development of fundamental motor skills in early childhood is a determinant of a physically active lifestyle during adolescence and adulthood (Riethmuller, Jones, & Okely, 2009; Vandorpe et al., 2012). We also know that structured physical education lessons during childhood can assist in the development of these skills (Robinson & Goodway, 2009). However, despite its survival as a 'core' or required subject in the secondary school curriculum in many countries, an established place has yet to be secured for physical education in primary schools (Kirk, 2005). Moreover, there have been concerns raised about decreasing amounts of curriculum time available in secondary school physical education (Hardman & Marshall, 2009). Recent developments in England demonstrate how fragile the status of the subject is, with investment of public funds reversed following a change of government (Ives, 2013; Jung, 2013).

We think, however, there is evidence of some physical education and sport pedagogy research being taken up in practice. Good examples are specific pedagogical models such as Sport Education and TGfU. Metzler (2005) and others (eg. Kinchin, 2006; Oslin & Mitchell, 2006) show that there is a strong and growing research base underpinning both models. But even so, it is difficult to judge the extent to which these models have become widespread in educational research more broadly, and have influenced practice in school physical education and youth sport, and more difficult still to say that they have impacted at a policy

level. Moreover, at this stage, a models-based approach to physical education seems only to be well known in the Anglophone literature.

We remain convinced that the 'orthodox' approach, where research is carried out by researchers then passed down to teachers through teacher education courses and on professional development days, where it is then implemented faithfully, is a flawed way of thinking about the relationship between research and practice (Kirk, 1989). Neither is it clear that alternatives to the 'orthodoxy', such as practitioner research, provides a means of bridging the 'research-practice gap' (Casey, Dyson, & Campbell, 2009; Tinning, Macdonald, Tregenza, & Bousted, 1996).

More positively, recent thinking about effective forms of teacher professional development offers some insights into how we might transform this orthodox approach by combining the strengths of the two described traditions (e.g. Armour & Yelling, 2007). If research allows formulating evidence-based recommendations for practice, the next logical step would be to develop evidence-based teacher training programs or CPD. To illustrate, after having provided evidence that students' quality of motivation for physical education related to both in-class (Aelterman et al, 2012) and leisure time (Haerens et al, 2010) physical activity, and having identified those behaviours that are affecting pupils' quality of motivation for physical education (Haerens et al, 2013), Aelterman and colleagues (2013) developed a training intervention for teachers. The development of the training occurred through a systematic and research-based development and optimization process. This involved an iterative design process featuring cycles of planning, implementation, response and revision in close collaboration with experienced in-service PE teachers (i.e. design-based research;

Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003; Aelterman et al, 2013). Both quantitative and qualitative methods were applied to improve teachers' appreciation of the training in order to optimize its content as well as its method of delivery. Aelterman and colleagues (2013) concluded that the systematic and research-based revision process (action research, Reason & Bradbury, 2008) ultimately resulted in a training programme that sits well with what PE teachers expect from effective CPD (Armour & Yelling, 2007). Through the different stages of the study, a large number of teachers were involved. Importantly, recent evidence, based on a randomized controlled trial, revealed that the training was effective to change teaching practice (Aelterman et al, in preparation). Such an evidence-based and effective training intervention largely designed by the teachers themselves but based on good evidence, if then spread on a larger scale, we believe has the potential to improve practice.

Both forms of relational research in sport pedagogy discussed earlier, MBP and *didactique*, are centrally concerned with practice. Both take as their starting point issues and problems in the practice of pedagogy, in the complex and dynamic interplay of teaching, curriculum and learning, and in the ways in which local contexts shape particular configurations of physical education and sport. They constantly test out in practice theoretically informed innovations. Much if not all of this relational research on MBP and *didactique* is located in sites of practice for significant periods of time, centred on interventions. This research is, in short, *practice-referenced*. Such forms of research also have the potential to more adequately inform policy as well. In the next part of the paper, we discuss how the impact of such research can maybe be heightened through programmatic approaches in research.

A programmatic approach

Another opportunity to enhance the theoretical coherence of our field lies in the development of *programmes* of research. When researchers take a programmatic approach to research, they systematically develop knowledge regarding a specific topic of research through conducting closely interlinked studies. In practice, a researcher will develop a programme of research by closely collaborating with other scholars who have conducted high quality research with regard to the topic of interest and by writing proposals to get funding to research those questions that arose in previously conducted studies, both those conducted by their own group as well as by other experts in the field. In this way the investigator tries to secure funding for several PhD projects, all on closely related topics. A programmatic approach to PESP research will thus gradually develop knowledge regarding specific topics of interest, constantly building on prior knowledge and expertise. The accumulation of knowledge can develop through the use of similar measures, research designs and bodies of literature. As knowledge accumulates, theory-based frameworks are developed for creating future projects and a research team becomes a centre of excellence with regard to a specific topic of research, and the methodologies related to it. Over time, such programmatic approaches can provide the field with its distinctive and unique characteristics and vouchsafe recognition of its contribution to advancing knowledge. We think there is evidence of increasing numbers of researchers, some working alone and some in teams, carrying out programmes of research focused on specific topics and sustained over periods of time. In the US, Thomas McKenzie, emeritus professor in the SDSU School of Exercise and Nutritional Sciences, clearly has established such an innovative and interdisciplinary program of research that has impacted both physical education and physical education teacher education. He established a center of excellence in research on health-related physical education programs, developed new methodologies (e.g. SOFIT), and

obtained funding for a wide range of interlinked projects (e.g. SPARK, MSPAN, TAAG). Every researcher around the world interested in topics that relate to physical education and health, will read and refer to his work, resulting in more than 300 citations yearly, with several of his most important publications being cited more than 200 times. Catherine Ennis (curriculum development), Michael Metzler (instructional models), Daryl Siedentop (sport education) are some of the well-established researchers in the US. In the UK, John Evans has established a strong and sustained research programme on themes such as the sociology of physical education and health, Kathleen Armour on career-long professional learning for teachers and coaches, and Anne Flintoff on girls, gender and equity in physical education, while in Australia Doune Macdonald has developed a strong line of research in curriculum development and Jan Wright in girls and gender.

What characterizes many publications on research in PESP, and perhaps reflective of a tradition of research in education more broadly, is the dominance of books, advocacy or discussion papers, reviews, and the prevailing reliance on qualitative methods and the study of small samples or cases. This contrasts with the approaches taken in research on sport, health-related exercise, and active leisure more broadly. Although some of the research questions are very much alike (e.g. girls participation in sport and physical activity), researchers in those fields predominantly publish in peer-reviewed journals and mainly rely on quantitative methods, with studies of larger samples. Such approaches not only characterize research in sport, health-related exercise or physical activity, but also in research on education more generally (e.g. see publications in highly ranked journals such as *Learning and Instruction*). Researchers tend to rely on strong research designs and a combination of quantitative and qualitative methods to understand pedagogy.

Contributions from PESP scholar to these well-recognized journals are rather limited. Interestingly and in alignment with the previous observations, we noticed that relative to other fields, the number of publications in peer-reviewed journals is still rather low. Furthermore, many of these publications are emerging in those journals that are dominantly read by researchers in PESP (*Quest, SES, EPER*).

We propose that there is a need for reflection on the position PESP researchers want to take in the research field more broadly. A question is then how the existing publication culture affects the field, and in particular the possibilities for interdisciplinary research, as clearly current publication practices reduce the accessibility, and perhaps also the credibility, of PESP research for scholars in related fields. We have come now to a situation in which, despite the overlap and similarities in the investigated research questions, the research in PESP often gets less recognition, which is illustrated by the lower amount of citations by researchers coming from other fields. In this respect, we advocate for leading research groups to also publish in those journals that represent the overarching research domains related to the investigated research questions (e.g. education, sport, public health), as a first step towards linking with the established literature in related fields, and stimulating recognition and interdisciplinary research.

Interdisciplinary research

Physical education and sport as a field is by definition multidisciplinary, since practitioners need to integrate knowledge from different domains. There are many fields of research that are in one or more ways related to the practice of physical education teaching, sports coaching and active leisure instruction. In each of the related research domains researchers

are generating valuable knowledge, but often these domains are not informing each other and the research is fragmented by its disciplinary divisions. To illustrate by just one example, Public Health researchers develop interventions to increase physical activity based on clear protocols and methodological steps (e.g. Intervention mapping) that often lack pedagogical input. Pedagogues have a strong tradition in prioritizing the voices of children, teachers and key stakeholders when designing physical activity interventions, but are often less familiar with methodologies applied within health promotion.

Lawson (1991) argues that fragmentation and specialisation appear to be unavoidable to universities and to fields of research. Nevertheless new fields do emerge from the fruitful interdisciplinary collaboration of researchers. Every field of research is characterized by evident strengths and weaknesses. Collaborations across fields allow sharing knowledge with regard to use of theory, research designs, measures, and statistical methods, among other things. Indeed, when newly generated research questions touch related domains, the main researcher can, we believe, actively try to establish collaborations with experts in those domains. For instance, after having worked together with a motivational psychologist to show that perceived competence is a crucial factor in explaining students' motivation for physical education (Haerens et al, 2013), a question arose over factors other than need supportive teaching behaviours could relate to students' perceived competence. As students' actual motor competence would likely be a crucial factor relating to students' perceived competence, collaborations with experts in motor learning and motor development were needed to move this line of research forward. After having established connections with experts in motor learning, several steps were taken to make the

collaboration more concrete. The involved research teams presented their ongoing work, while discussing possibilities for future research, in order to apply for joint funding.

Interdisciplinary research requires 'touchstones' (Walker, 1985), spaces of common ground or interest, where groups from different disciplines identify the interests they *share* rather than what makes them *different*. For instance, other practice-referenced fields such as law and medicine can be consulted for examples because they also build on the study of cases to generate new ideas about practice (see Stenhouse, 1980). A recent initiative by AIESEP in March 2012 (http://www.aiesep.ulg.ac.be/pages/sport_pedagogy.php) focused on the research-practice nexus in physical education and sport pedagogy. An outcome of this seminar has been a programme of work centred on the use of interdisciplinary case studies to underpin and inform teacher and coach professional development (Armour, in press). There are also clear connections with the research domains of public health, motor learning and motivational psychology in which many researchers are interested in the promotion of lifelong engagement in physical activity. A future task for interdisciplinary research in sport pedagogy is then to search for and discover the touchstones within related fields, generated by relational, practice-referenced and programmatic research.

Conclusion

We have argued in this paper that there is much to be optimistic about with regard to the development of a critical mass of physical education and sport pedagogy research, while we remain mindful of the relatively small-scale of this scholarly community when set beside other Kinesiology subdisciplines, and the challenges that continue to be faced by school physical education and youth sport. We recognised, in particular, the limited benefits

practice and policy gain from research. We noted that it is timely to consider the future development of research in physical education and sport pedagogy.

We think a consensus about the proper object of educational research in physical education and sport is emerging, centred on the concept of pedagogy and its interacting and interdependent dimensions of teaching, curriculum and learning practiced in specific contexts or *milieux*. Given the complex and dynamic nature of the field, we suggest that the growing prevalence of relational studies confirms this consensus and suggests at least three additional features of future research, that it practice-referenced, programmatic and interdisciplinary.

We believe that strong leadership is required to facilitate the continuing future emergence of physical education and sport pedagogy research. This must come from the scholarly associations (such as ARIS, AARE, AERA, AIESEP and BERA, among others) that currently exist, and we propose that each seeks to make even stronger links with the others in order to open up and maintain lines of communication and transfer of information. In addition to leadership from these institutions, we suggest that professional associations of practitioners need to collaborate with scholarly associations. Universities that have the resources and expertise need to form collaborations, intra and internationally, that will fuel continuing growth and development of researchers. And finally the publication outlets for our research, including journals and books, have a distinctive part to play in future development; indeed, there will be considerable challenges to current practice as the phenomenon of open-access publishing becomes even more prominent.

Part of the strong leadership that is required to increase the influence of research in PESP on the social economic, health and educational problems that require resolution now and in the future is action that leads to connection, with other fields, and with other readerships, beyond the traditional audience of PESP researchers and practitioners. We have suggested that leading research teams with strong lines of research will need to seek out opportunities for interdisciplinary collaboration. They will need also to seek ways of scaling up the excellent but small-scale work that has been the staple of the PESP field, which means considering mixed methods approaches that permit studies of larger samples. And it will require these teams to seek outlets for their work in journals that attract high citations as a strategy for making specialist PESP journals more highly cited in turn.

We have an optimistic view of the future of physical education and sport pedagogy research, despite the considerable challenges that will need to be faced. Optimism we think is an essential ingredient of future success. But it is insufficient by itself. We need, in addition to considerable good fortune, as clear, constructive and well-informed as possible vision for what might be possible. This paper is the beginning of a modest contribution to discussion of these issues.

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