Models-based practice: great white hope or white elephant?

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Structured Abstract

Background: Many critical curriculum theorists in physical education have advocated a model- or models-based approach to teaching in the subject. This paper explores the literature base around models-based practice (MBP) and asks if this multi-models approach to curriculum planning has the potential to be the great white hope of pedagogical change or, if in fact, it is a white elephant that should be reconsidered or abandoned.

Purpose: To review the literature around pedagogical and curricular change in physical education that relates to teachers experience of models-based practice. This review of research on teachers' perceptions and use of MBP was undertaken in an effort to ascertain the ways in which practitioners' interpreted this type of change in practice.

Data Collection: Papers were selected by searching EBSCO databases with the identifiers "Instructional Models", "Sport Education", "Teaching Games for Understanding" and their hybrids, "Cooperative learning", "Teaching Personal and Social Responsibility", "Personalised System of Instruction" "Peer Teaching Model" and "Inquiry Teaching." These were chosen as they match the seven innovative models in Metzler's (2010) compendium of instructional models. Further articles were obtained through the citations and references in the original documents.

Data Analysis: Analysis of the 45 papers followed a systematic process of inductive analysis and constant comparison. The categories, which emerged from the analysis, were based upon the researcher's perceptions of findings and revealed five key findings/themes; i) Change for Teachers, ii) Difficultly and Time, iii) Diversification in the teacher's role, iv) Evidence of effectiveness and iv) University/teacher collaboration.

Findings: While changes in attitude, positive feelings, efficacy, enthusiasm and vigour were reported by teachers there was also an acknowledgement that they lacked experience in using MBP which made them feel like they were 'beginning teachers' again. For some the conceptual shift was too much and they deliberately returned to their old pedagogies. For others change occurred slowly but gradually over the course of the intervention. When professional learning

was part of the relationship between the teachers and researchers then these returns to old practices was not reported. However, it was acknowledged that to engage with MBP required greater effort on behalf of the teacher and that to feel comfortable could take upwards of two years. Change was a difficult undertaking but when 'evidence' of success was used to support the teachers' learning then they felt more confidence in their decisions. The biggest factor in engendering change was the sustained support offered through collaborative partnerships between schools and universities. These supportive relationships allowed the teachers to continually reconsider their practice with the help of experienced colleagues.

Conclusions: While MBP has begun to help practitioners to change and develop their pedagogies and curriculum we are still a way away from understanding the impact of changing to a models-based approach. Research needs to be focused beyond the initial use of the model(s) and needs to explore the longitudinal impact of adopting a multi-model curriculum. Furthermore, advocates of MBP need to explore the pedagogical and curricular ramifications on teachers of the long-term adoption of a models-based approach.

Practitioner Summary

Change, be it a new national curriculum or workplace reforms, is an ongoing concern for teachers. Additionally there are ongoing concerns about the development of more student-centred learning experiences and the use of innovative practices. This paper used a review of literature around pedagogical practices such as Sport Education and Teaching Games for Understanding to explore teachers' responses to using these approaches in their teaching. A large number of the forty-five papers reported positive changes in teachers' attitudes, feelings, efficacy, enthusiasm and vigour. However, teachers felt they lacked experience in using MBP which made them feel like they were 'beginning teachers' again.. The biggest factors in engendering change were ongoing professional learning and sustained support offered through collaborative partnerships between schools and universities. These supportive relationships allowed the teachers to continually reconsider their practice with the help of experienced colleagues.

Key Words: Pedagogical Model, physical education, models-based practice, instructional model, curriculum model

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> The first question that needs to be asked when planning a curriculum is not: How can we plan more effectively or teach more effectively? It is: *What curricula are worth planning*? There is no point doing more effectively what is not worth doing in the first place!
>
> Pratt (1994, 2, Original Emphasis)

Models-based practice (MBP) seems to be the 'bookies favourite' to replace traditional teacher-led practice in physical education. Indeed it appears to have been established beyond reasonable doubt that a models-based approach is the great white hope[1] for teaching in the subject. You only have to read the contents pages of any of the Physical Education journals over the last decade to see the growing level of advocacy that exists for this idea through the papers published in this field. Dyson, Griffin and Hastie (2004, 237) occupied a crowded space when they suggested that MBP was a "a wave to the future". Nonetheless as Bechtel and O'Sullivan (2007) noted, despite being around for more than quarter of century, MBP has not been adopted by teachers and has remained as an innovation in physical education for decades. Twenty years ago Siedentop (1992, 70) argued that "we need to think differently about what we do in the name of physical education" but is it not now the time to *do* differently what we do in physical education? Despite the many advocates of a models-based approach to physical education this paper enquires if the fundamental question has yet to be asked: Is it worth doing in the first place? In other words is MBP a white elephant[2] rather than the great white hope many believe.

Early advocates of MBP in physical education were champions of a single model. Siedentop (1982), who later supported a multi-model curriculum, initially suggested replacing what is traditionally called physical education with Sport Education. However it was later recognised by Lund and Tannehill (2010) that one model was not capable of delivering the entire

[1] Someone (or something) expected to achieve great success in a given field.
[2] A gift that costs the recipient more that the gift is worth to maintain

breadth and depth of learning required in the different national contexts in which physical education curricula operate. In presenting their rationale for MBP in physical education Haerens, Kirk, Cardon, and Bourdeauhuji, (2011) recently argued that the broad ranging and diverse context of physical education offers complex pedagogical and curriculum design challenges to teachers. Such is this complexity that Haerens et al (2011) suggested that teachers needed to adopt multiple models of practice in their teaching of physical education. Similarly Metzler (2011) has held for more than a decade that the variables inherent in physical education – i.e. personnel, learning goals, facilities, content, activities, and teacher instruction - are such that no one model is capable of encapsulating and then delivering them all.

The idea of a multi-model approach was first mentioned in the work of Siedentop and Tannehill (2000) and Meztler (2000). Like Haerens et al (2011) and Lund and Tannehill (2010) these two early advocates of MBP suggested that teachers were not best placed to start from scratch to build a wholly local curriculum that was capable of addressing the broad and diverse range and context of physical education. Instead of these 'home grown' curricula Siedentop and Tannehill (2000, 146) championed "curricular models [that] have been developed, tested, refined, and further tested in a variety of school settings." Similarly Kirk and Macdonald (2001), while strongly advocating the expertise of the teacher in their localised context, suggested that curriculum reform was best undertaken away from concerns for budgeting and resourcing and the personal agendas of schools and teachers.

In arguing for alternative pedagogical approaches to the instructor-led practices found in the gymnasiums, swimming pools and on the sports fields where physical education is taught, critical curriculum theorists have also warned that change is complex. In their work on curriculum planning Jewett and Bain (1985) and later Jewett, Bain and Ennis (1995) argued that, while the development of a curriculum capable of serving the local 'clientele' is undertaken at a

school level, the development of physical education models needs to be done outside of the narrow personal experience of students and teachers. Consequently they suggested that models serve as starting point in an interactive process of reflection and action as teachers engage in curriculum praxis. Therefore, they argued, curriculum models (and in this current argument MBP) need to be considered as well formulated, researched and refined ideas that stimulate reflection and engender meaningful action in the creation of local curriculum. This notion of fluidity is in direct contrast to the idea that teachers are not best placed to manage change and Metzler's (2011, 8) argument that "the best instruction in physical education starts with a well-defined plan that can guide teachers and students." Therefore is MBP a starting point for curriculum design? Or is it a fixed idea with a firmly established finishing point? Many, including Jewett, Bain and Ennis (1995), argued that curricula should be considered as fluid constructs that require site-specific modification. Yet is this degree of modification beyond teachers (Siedentop and Tannehill 2000)?

One or two colleagues have suggested that, despite the level of support for MBP, that these local level modifications are too complex for teachers. They have strongly questioned the value of models-based approach to teaching physical education as the intricacy of these models is such that only 'the best of the best' can use them. In his challenge to the Teaching Games for Understanding model Launder (2001) expressed the concern that the approach was akin to an aeroplane that can only be flown by test pilots. In other words Teaching Games for Understanding is beyond the abilities of 'ordinary' teachers to use because to do so requires advanced instructional skills and a deep 'philosophical' understanding of the model. Taking this argument further, if teachers cannot properly understand Teaching Games for Understanding then there is a little chance of their modifying them to suit their local needs and clientele. This paper enquires whether Launder's concern is equally applicable to all pedagogical models

(Haerens et al 2011). Its purpose is to review the literature around pedagogical and curricular change in physical education that relates to teachers' experience of models-based practice. It focuses on teachers' perceptions and use of MBP and was undertaken in an effort to ascertain the ways in which practitioners interpreted this type of change in practice.

In a recent piece in the practitioner magazine *Physical Education Matters* Brownlee (2011), a head of physical education from Scotland, openly stated his belief that the real issue in his using a model such as Sport Education was not whether his use of it was authentic but whether his efforts under the guise of Sport Education worked. While the role of 'test pilot' is not a sustainable one for teachers, neither should the dilution of MBP, for the sake of ease, be considered an answer to the pedagogical problems reported in physical education (Curtner-Smith, Hastie, and Kinchin 2008). In considering Brownlee's statement the reader is left wondering if this is truly curriculum praxis (Jewett et al 1995) or just a deliberate move to make change workable regardless of the pedagogical consequences. If practitioners are unable or unwilling to use MBP as the 'creators' intended then, as a community, do we need to find 'attainable' and 'doable' alternatives that will move practice forwards rather than living with and advocating a pedagogical 'white elephant' of our own making? Do we need to accept that teachers are going to either make model fit their context or not use them at all? This paper therefore begins to tentatively explore the question: "*What are teachers' reported perceptions of MBP and is practice change a consequence of using them?*"

Methodology of review

The purpose of a review – be it narrative, descriptive or systematic – is to "examine the material pertaining to a particular area" (Shulruf 2010, 596). However, the systematic approach used to carry out this literature review is different from the approach taken in traditional descriptive or narrative reviews, inasmuch as it used methods that allowed the researcher to

control potential methodological biases (Shulruf 2010). In other words this approach acknowledges the body of research that exists and seeks to draw synthesis from the findings while acknowledging and accounting for researcher bias (Boaz, Ashby, and Young 2002).

In their work with the Economic and Social Research Council (ESRC) in the UK, Pawson, Greenhalgh, Harvey, and Walshe (2004) held that, at its simplest level, systematic reviewing is the process of gathering together existing evidence on the success or otherwise of a certain thread or topic of research. They stressed that such reviews need to be pragmatic about their aims and especially conscientious in their approach. A systematic or realist review "in contrast [to a narrative or descriptive review], follows a more heterogeneous and iterative process, which is less amenable to prescription and probably demands greater methodological expertise on the part of the reviewer" Pawson et al (2004, v). These authors posited that such a review would consequently have greater potential to contribute to policy makers' and practitioners' 'sense-making' i.e. their understanding, interpretation and intervention in given situations.

Drawing on the work of Barr, Hammick, Koppel, and Reeves (1999) and Boaz et al (2000), Shulruf (2010, 596) suggested that the methodological research standards required to undertake this type of review include:

1. Focusing on a specific question
2. Using a protocol to guide and plan the processes to be followed
3. Identifying as much of the relevant literature as possible through a comprehensive search
4. Making decisions about the inclusion and exclusion of studies based on methodological criteria
5. Synthesising research findings and being explicit and transparent.

The author of this paper used these standards to systematically examine peer-reviewed, empirical studies that within their findings reported on the impact MBP had on teachers. In seeking to answer the question "*What are teachers' reported perceptions of MBP and is practice change a consequence of using them?*" it was considered that ultimately it was practitioners who

would be ‘doing’ MBP and therefore it was important to assess how research has positioned their experiences of using these pedagogical approaches. The following section shows how Shulruf’s (2010) methodological standards were used in this review.

1. *Specific question:* “What are teachers’ reported perceptions of MBP and is practice change a consequence of using them?”

2. *Planned Protocol*: The basis of this paper is a consideration of peer-reviewed, empirical research into teachers’ and pre-service teachers’ experiences of using MBP in physical education. The review was organised around seven of the eight models in Metzler’s (2011) book *Instructional Models for Physical Education*. The “Direct Instruction” method was not included in the search as it is widely considered to be the dominant approach to teaching in the subject. Therefore, “Sport Education”, “Teaching Games for Understanding” and their hybrids, “Cooperative Learning”, “Teaching Personal and Social Responsibility”, “Personalised System of Instruction” “Peer Teaching Model” and “Inquiry Teaching” were the seven models used in the review. Some colleagues may not consider this to be a full ‘list’ of pedagogical models - indeed Siedentop and Tannehill (2000), Jewett et al (1995) and Lund and Tannehill (2010) all differed in their choice of examples of MBP - nevertheless it was felt that Metzler’s compendium, now in its third edition, served as a well-established directory of MBP in physical education for the purposes of this paper.

3. Identifying the relevant literature: Papers were selected by searching all EBSCO databases with the main identifiers being the names of the seven models and the term “Instructional Models.” After this initial search papers were analysed for suitability in relation to the criteria described below. Further journal articles were obtained through the citations and references in the originally discovered documents.

4. Inclusion and exclusion criteria: All potential papers were scanned to ensure they met the inclusion criteria. The only studies contained within the present review were empirically based, peer-reviewed papers written in English. Purely descriptive papers or dissertation abstracts were not considered. Furthermore, papers had to report on the perceptions of the teachers involved in the implementation of the respective pedagogical model. In the end forty-five papers were identified that satisfied the selection criteria.

5. Synthesising research findings: Analysis of the 45 papers followed a systematic process of inductive analysis and constant comparison as per the protocols recommended by Denzin and Lincoln (1994) and Lincoln and Guba (1985). Each paper was read through once to confirm its initial inclusion in the review before being read again and coded "to make the task of analysis more straightforward by sifting relevant material from a large body [of writing]" (Potter 2009, 615). These coded sections were transcribed and affixed with preliminary notes about their nature and interest. The selection of codes was inclusive at this stage. Coding then became a cyclical process as new understanding brought the author back to previously read material with fresh understanding (Potter 2009).

The initial codes and notes were 'cut and pasted' so that "all (or a subset of) the data on a given theme could be put together" (Lee and Fielding 2009, 537). Codes such as 'interactions between teacher and research significant (Barrett and Turner, 2000)' and 'CPD needed to increase teacher understanding (Dyson and Rubin, 2003)' were placed into wider unnamed categories, which were also given notes about their nature and interest. This process was more exclusive as material deemed irrelevant was discounted from the review. These categories (and their accompanying notes) were fluid before the themes of this review were consolidated through the process of inductive analysis undertaken by the author. Finally, to help *manage bias* and increase the *trustworthiness* of these findings a critical friend was used for all key decision-

making (Kitchenham 2004). This ‘friend’ is an experienced scholar - familiar with the literature on MBP - who has worked with teachers over a sustained period to support their use of a pedagogical model. While the author undertook the initial analysis alone, the critical friend subsequently checked the systematic review and supported the choices made.

The analytic induction of the forty-five papers revealed five key findings/themes; i) Change for Teachers, ii) Difficultly and Time, iii) Diversification in the teacher’s role, iv) Evidence of effectiveness and iv) University/teacher collaboration, each of which will be discussed in the results section.

Results

Change for Teachers

The widest reported finding in the review was the need, and in some case the personal desire, for teachers to change both their approach to teaching and their perceptions of what teaching meant in physical education. In their studies in Australia and the UK respectively, Alexander and Luckman (2001) and Clarke and Quill (2003) reported an increase in nearly 400 elementary and high school teachers’ positive feelings, efficacy, enthusiasm and vigour as a result of using Sport Education. In a similar way, O'Donovan, MacPhail, and Kirk (2010) found that Sport Education allowed eight primary school teachers in the UK to overcome their discomfort with teaching physical education.

Change in attitude was further acknowledged by Alexander and Luckman (2001) in their nationwide study with elementary and high school physical education teachers in Australia. They found that many preferred Sport Education to traditional physical education pedagogies. Similarly, Brunton (2003) said that by using Sport Education teachers were able to change their position within the classroom, but only after time had been taken by staff and students to learn their new roles. In their respective work in the UK and USA using the Cooperative Learning

Model both Casey and Dyson (2009) and Dyson, Linehan, and Hastie (2010) suggested that sustained and ongoing pedagogical change required the teacher (who was also a researcher) to initially learn how to teach through the model and then engage in a conceptual shift of what teaching in physical education was: a finding also reported by Barrett and Turner (2000) when supporting an elementary school teacher's use of Teaching Games for Understanding in the USA. In their US-based exploration of changes in classroom ecology through the use of Cooperative Learning Dyson and Strachan (2004) found that the hierarchical positions between the high-school teacher and students blurred and student efficacy increased, which in turn increased engagement and minimised the need to manage the behaviour of the students.

However, while Brunton (2003), Casey and Dyson (2009), Dyson and Strachan (2004), and Alexander, Taggart, and Thorpe (1996) all reported that teachers were changing the teaching and learning approaches used in their lessons, others found that this conceptual shift was too much. McCaughtry, Sofo, Rovegno, and Curtner-Smith (2004) and McNeill, Fry, Wright, Tan, Tan, and Schempp (2004) reported that the pre-service teachers in their studies struggled to 'shake off' the traditional teacher-led approach to teaching physical education both in Sport Education in the USA and the Games Concept Approach in Singapore. Indeed McCaughtry et al (2004) found that their pre-service teachers used the inherent competition element in Sport Education to simply rebrand rather than change their normal curriculum. In their study of Singaporean teachers' use of the government endorsed 'games concept approach' McNeill, Fry, Wright, Tan, and Rossi (2008) suggested that after initial success in which the pre-service teachers became more familiar with the approach they then quickly returned to using their old teaching styles.

Findings from this review showed that while some research in the UK and USA reported a positive feeling towards the changing role of the teacher in MBP (Clarke and Quill, 2003;

Grenier, Dyson, and Yeaton, 2005), others in the Far East reported that the unfamiliarity of the new classroom roles inherent in MBP impacted on both the teachers' and the students' attitudes towards the lessons (Cruz 2008; Rossi, Fry, McNeill, and Tan 2007). Despite the mixed contextual success of MBP a number of authors acknowledged that teachers needed to be involved in enhanced and ongoing continued professional development (CPD) when they seek to change practice (Ko, Wallhead, and Ward 2006; MacPhail, Gorely, Kirk, and Kinchin 2008; Sinelnikov 2009). The sustainability of this CPD allows teachers to transfer their general understanding of the model – as gained through their initial CPD – beyond the initial point of implementation, and maintain fidelity over the longer term (Ko et al 2006). This degree of CPD is seen as greatly enhancing teachers' normal experiences of professional learning in physical education (MacPhail, Gorely et al 2008) as it requires a significant investment of time and energy to learn how to use MBP (Sinelnikov 2009).

However, learning a new way of doing things was also an issue for teachers in terms of their implementation of a new pedagogical approach. In the USA Dyson (2002) reported that the elementary teachers he worked with were required to make substantial organisational adaptations when they used Cooperative Learning in their teaching. Dyson (2002) suggested that the inherent differences in Cooperative Learning in terms of management, instruction and planning meant that teachers took two years or more to feel comfortable with its use. These changes were also noted by Parker and Curtner-Smith (2005) in their investigation of Sport Education in the USA, when they suggested that management tasks took precedence over teaching and learning tasks in the early stages of implementation for pre-service teachers. While Pill (2008), in his work with Sport Education in Australia, acknowledged that use of the model increased the elementary teacher's workload, he also said that it positively disrupted the established and

inappropriate student hierarchy (based on perceived competence) and allowed the teacher to refocus on the learning of all students, rather than just those perceived as being gifted.

It is unsurprising that the initial euphoria experienced by teachers was countered by the feeling that the use of MBP required still greater effort. However, it has been shown that if teachers, and those supporting their professional learning through MBP, are creative and willing to experiment (Wright and Burton 2008) then positive changes can be made in the spaces where physical education is taught. However, as the next section shows these changes do not occur without some compromises.

Difficultly and Time

A number of studies explored the learning that elementary and secondary school teachers and pre-service teachers undertook in order to use MBP. Brunton (2003), Casey and Dyson (2009), Casey, Dyson, and Campbell (2009), Dyson (2002), Dyson, Linehan, and Hastie (2010), Gubacs-Collins and Olsen (2010), Hastie and Curtner-Smith (2006), McCaughtry et al (2004), Sinelnikov (2009), and Wright and Burton (2008) all reported that teachers need to consider the time it takes to learn a new pedagogical model, especially ones that reconceptualise the roles that the participants are expected to take. Brunton's (2003) work with a secondary school teacher's use of Sport Education in the UK highlighted the importance of this reconsideration in shifting the traditional hierarchical structure of one teacher and multiple learners. Such professional learning on the part of the teacher is "labour intensive" (Casey and Dyson, 2009), requires "concentrated effort" (Dyson et al 2010), increases organisation (Ennis et al 1999), needs "support" (Gubacs-Collins and Oslen 2010), "superior pedagogical content knowledge" (Hastie and Curtner-Smith 2006), and "ongoing professional learning opportunities" (McCaughtry et al 2004; Sinelikov 2009; Wright and Burton 2008). These factors should be considered by both teachers and those who advocate significant pedagogical change in the curriculum, so that MBP

achieves its objective of facilitating and enhancing learning in physical education, rather than it being seen as a burdensome approach beyond the daily practice of teachers.

Significantly, a number of authors found that both secondary school and primary school teachers felt like “beginners” again in terms of their “teacher knowledge” as these new (to them and their students) pedagogical practices moved them “outside of their comfort zone” (Dyson, 2002). This change in their confidence as teachers manifested itself in different ways and in different contexts. While O’Donovan et al (2010) found that primary teachers in the UK who used Sport Education overcame their discomfort with physical education, others reported a decline in teachers’ self-esteem (Barrett and Turner 2000), initial frustrations due to unfamiliarity with the model (Gubacs-Collins 2007) and that teachers felt they made simple mistakes due to their lack of experience with the approaches.

Another consideration for teachers was the lack of either instant or guaranteed success associated with the approaches (Kim 2006). This had to be considered alongside the costs in terms of time and esteem mentioned earlier. For example, in the most extreme cases McCaughtry et al (2004) found that the pedagogical costs of using Sport Education were too high and forced early career teachers to actively avoid using this model. In other situations teachers’ prior experiences and habitus (Ko et al 2006; Gubacs-Collins 2007), and extraneous matters such as school culture (Martinek, Schilling, and Johnson 2001) have strong residual influence that can impose/re-impose themselves and ‘force’ primary, secondary and pre-service teachers to abandon their efforts to change. However, in stark contrast O’Donovan et al (2010) suggested that the teachers in their study actually reported that the structure of Sport Education reduced the planning workload for physical education thus reducing the pressure and stress on the teachers involved.

Diversification in the teacher’s role

Despite the mixed messages emerging from the previous sections, one of the overwhelming findings was that while doing something differently was “not easy” (Casey et al 2009) and prior teaching experience was “of little initial use” (Barrett and Turner 2000) in “stopping mistakes” (Cruz 2008), it was an “overwhelmingly positive experience” and engendered a “shift in [teachers’] goal orientation”(Alexander and Luckman 2001).

In their study in the USA exploring one teacher’s use of Teaching Games for Understanding Barrett and Turner (2000) found that ‘Sandy’ quickly got to grips with the new approach despite feeling that her prior experience as a teacher was of little use. Similarly in his project with two secondary school teachers using Sport Education in Hong Kong Cruz (2008) suggested that while prior knowledge was useful in the act of teaching it was not sufficient to stop the ten practitioners making mistakes. As Casey et al (2009) found, learning how to teach in a new way should not be considered an easy process; a suggestion supported by Dyson (2002) who described the use of Cooperative Learning as ‘complex’.

In addressing these types of concerns a number of key pedagogical ‘changes’ or modifications were noted in the literature. Hastie and Buchanan (2000), in their work with middle school teachers using Sport Education in the USA, found that MBP encouraged, even required, a diversification in the teacher’s role. Similarly, in their US study of one middle school teacher’s use of Peer Teaching within a Sport Education unit, Wallhead and O'Sullivan (2007) suggested that such a pedagogical ‘about-face’ moved the teacher away from ‘her’ position as a provider of knowledge and instead gave her more opportunities to observe and assess her students’ learning. Moreover Curtner-Smith and Sofo’s (2004) US Sport Education study suggested that the model acted as a catalyst to spark the pre-service teachers’ interest in professional learning. In turn this engendered a desire to engage in personal learning around innovative pedagogy rather than simply replicating traditional practice. This renewed interest

enabled the teachers to move their efforts beyond behaviour management and focus much more on the learning they were trying to achieve through their teaching.

However, it was not a case of stepping back and letting things simply progress at the pupils' pace. There were number of key findings that suggest that MBP requires teachers to do more, not less work. Hastie and Curtner-Smith (2006) suggested that using MBP – especially the combination/hybridization of two models (in their case Sport Education and Teaching Games for Understanding in the USA) – requires a higher degree of content knowledge and pedagogical content knowledge. This may be because the notion or theory of MBP is not enough in itself to facilitate learning and therefore teachers have to learn themselves how to apply these ideas in their site of practice and with their students. This need to allow practice to inform the applicability of theory in turn requires teachers to develop and widen their pedagogical experience and understanding: this was certainly a key conclusion of McMahon and MacPhail's (2007) work with a pre-service secondary school teacher using Sport Education in Ireland. However, in contrast Stran and Curtner-Smith (2010) concluded that curricular knowledge rather than pedagogical content knowledge and content knowledge was the key understanding needed by the two pre-service teachers when using Sport Education. Therefore they recommended that Physical Education Teacher Education (PETE) programmes spend more time teaching pre-service teachers how to use MBP. This idea of learning about the model rather than about physical education pedagogy was evident in an earlier paper by the same authors (Stran and Curtner-Smith 2009). In this study they suggested that such a programme around MBP was more effective in changing pre-service teachers' pedagogies than one based around the idea of curriculum models.

As the gap between old and new pedagogies is closed teachers may become better able to anticipate their students' responses and therefore become more reactive to students' needs (Kim

2006). This occurs because MBP acts as a scaffold for the learning process (McNeill et al 2004) and helps to create a questioning approach that aids learning (MacPhail et al 2008). However it does not do the teaching itself, is not a "panacea for changing poor behaviour" (Martinek et al 2001) and is dependent on the pedagogical skill and subject knowledge of the practitioner.

As we look at the final two themes it is worth noting that Alexander et al (1996) and Curtner-Smith, Hastie and Kinchin (2008) warned that there was a gap between the adoption of a model and the creation of a suitable learning environment in which it can be successful. This seems to occur for a number of reasons, but the significant ones seem to be practitioners' reluctance to move away from the traditional hierarchical structures of teaching (Brunton 2003), and their unwillingness to remain faithful to the model (Curtner-Smith et al 2008) which in turn leads to the rebranding of traditional programmes rather than real pedagogical and curricular change. This rebranding is only part of what Kirk (2011) suggested was the tendency by school systems to normalise innovative practice in order to make it fit with existing structures. This is best shown in Curtner-Smith et al's (2008) conclusion that physical educators opted for one of three versions of Sport Education i.e. textbook, watered down and cafeteria. The latter two are more convivial of current practice in schools and the current timetabling that prefers curricula that are an inch deep and a mile wide. Indeed, as the last two sections of the review will suggest, these practitioner concerns with traditional values can be addressed when the effectiveness of MBP is 'proven' and universities develop networked learning communities in collaboration with teachers to support professional learning about MBP.

Evidence of effectiveness

As suggested earlier teachers are concerned that making changes to their pedagogies and curricula will only serve to break something that already works. That is to say that they do not perceive the need to try something new because traditional approaches have delivered high

quality physical education for decades. While it is outside of the remit of this paper to discuss these concerns and their inaccuracy (see Kirk (2010) for a full exposé) it is worth noting that a small number of the reviewed papers suggested that practitioners need to see proof from other schools through practice undertaken by other teachers that show that MBP works.

While this need for 'hard evidence' was only specifically mentioned in four of the studies in primary/elementary schools (Dyson and Rubin 2003; Kinchin, MacPhail, and Chroinin 2009; Sinelnikov 2009; Walsh, Ozaeta, and Wright 2010) the fact that these projects occurred in three countries (USA, Ireland and Russia) and across three models (Cooperative Learning, Sport Education and Teaching Personal and Social Responsibility) increases the significance of this finding. Furthermore, when this desire for evidence is viewed in light of concerns that primary school teachers received too few hours during their training in physical education and that MBP is still considered as innovative practice, it suggests that that this topic warrants further discussion.

In their study of The Cooperative Learning model in the USA Dyson and Rubin (2003) suggested that the frustrations of the initial implementation were overcome with ongoing professional development that allowed the teacher to begin to see the medium and long-term rewards of perseverance with the model. Furthermore the teachers also began to realise that such effort would help students gain more than just new motor skills. Similarly Kinchin et al (2009) stated that teachers were a little scared of what might happen in an inter-school Sport Education culminating festival. However, the evidence of their own eyes and experiences was enough to leave them delighted with both the outcome and its appropriateness as a conclusion to their endeavours. In his work with Russian teachers through Sport Education Sinelnikov (2009) found that pedagogical and curricular change was further facilitated by an evidence-based showing the successes of other practitioners and that teachers needed to see the results of their peers efforts to

believe in the potency of the model. Walsh et al (2010) reported that despite the transfer of learning that occurred across contexts by using the Teaching Personal and Social Responsibility model, teachers in the USA were reluctant to attribute the success to the model. Instead the teachers looked elsewhere for answers as to why transference had occurred. This prompted these authors to conclude that teachers need to see evidence of change before they would buy into the change itself.

The next section shows that one possible source of this evidence might be the ways in which the researchers in each project supported the learning of their cooperating teachers. Indeed it was noted in a number of contexts and models that this collaborative experience was a significant factor in teachers' learning and their subsequent engagement with MBP.

University/teacher collaboration

The first four sections strongly suggest that pedagogical and curricular change do not occur spontaneously. Furthermore, while it is beyond the remit of this paper to discuss teachers' professional development, it is clear from the literature (see Armour and Yelling 2007) that this is currently highly ineffective in helping teachers change and improve their teaching in physical education.

In advocating the need to 'maintain a watching brief' Alexander et al (1996) wanted to ensure that education remained the key outcome of Sport Education and that it was not simply used to rebrand current physical education practice and maintain the status quo. However, many other authors have gone further and suggested that the links and support mechanisms created between universities and schools, and researchers and teachers, were important in the successful adoption of MBP. Barrett and Turner (2000), Brooker et al (2000), McCaughtry et al (2004), McNeill et al (2004), MacPhail, Gorely et al (2008), MacPhail et al (2008), O'Donovan et al (2010), and Wright, McNeill, Fry, Tan and Tan (2006) all endorsed the importance of

school/university collaborations in supporting the teachers' ability to move the theory of the model into their classroom and subsequently engage in research-informed teaching. Brooker et al (2000) posited that support from research colleagues through university collaboration was important as it provided teachers with research knowledge that allowed them to overcome the initial de-skilling that was occurring when using Games Sense for the first time. In the same way O'Donovan et al (2010) noted the hugely positive experiences teachers gained through their collaborations with university researchers who know and understood the Sport Education Model. In their work in Singapore with the Games Concept Approach McNeill et al (2004), McNeill et al (2008), and Wright, McNeill, and Fry (2009) suggested that there was a great need for these collaborations because of what they termed "shortfalls" in current teacher education, which in turn limited teachers' ability to question and modify their existing pedagogies.

Others have referred to the need for support (Gubacs-Collins and Olsen 2010) for greater professional learning opportunities (Dyson and Rubin 2003; Sinelnikov 2009), to coach and sustain teachers' use of MBP (Stran and Curtner-Smith 2009), to provide opportunities for teachers to practice (Wright et al. 2006) and support them in transferring theory to the classroom (McMahon and MacPhail 2007). In his role as a teacher-as-researcher Casey (see Casey and Dyson 2009; Casey et al 2009) showed how theory and practice could be melded together to support and enhance his sustained use of MBP. His 'self-help' approach allowed him to engage in theoretically-informed practice, or praxis. If this approach were encouraged in other projects then it would allow researchers to further support the praxis of their cooperating teachers.

Discussion

The aim of this review was to consider if MBP is worth doing. There are a number of positives to emerge from this examination of the literature: teachers expressed a need and personal desire to update their practices, they saw real differences in their students learning and

in their effectiveness as teachers when using MBP, and they felt that their efficacy increased as a result of using different models. However, there were also ramifications for both their identities as teachers and their workload. It took a significant investment of time and energy, made them feel like neophyte teachers again with little or no prior experience to draw on, it changed and diversified their role as pedagogues and, in some cases, required them to rebrand themselves.

The messages that emerged in the previous section are generally positive but are they positive enough to support the pursuit of the idea of MBP? Are we, as a research community, doing enough to properly demonstrate the 'do-ability' and sustainability of MBP in physical education? This paper suggests that we need to do more to understand MBP. We need to move beyond studies that show us that the individual models work and start engaging with the notions around what it takes to encourage teachers to adopt a multi-model approach to teaching and learning in physical education. We need to develop communities that can support teachers to use not just one model but multiple models in a given school year with the same participants rather than only using single models over short units of work. We need to understand how to facilitate pedagogical change and how teachers integrate these models into their daily practices. We need to understand how teachers discover MBP outside of their teacher education and how they are supported to use MBP in their schools. In other words we need address the question about the worth of MBP and find ways of supporting teachers use of it.

Teachers need support in making the conceptual shift from direct instruction to MBP./ Therefore we need to develop and adopt professional development programmes and physical education teacher education (PETE) courses that support the sustained development of teachers' practices. Professional development needs to markedly change (Armour and Yelling 2007) to offer sustained support and increased understanding to in-service teachers. Similarly PETE needs

to ensure that pre-service teachers are given the time to understand and use these models rather than simply experiencing multiple models in a curriculum that is an inch deep and a mile wide.

The collaborative role of the researcher and the university and the growing body of evidence that MBP 'works' served to support the researched/researching teachers' adoption of MBP in their teaching. However are these successes enough to warrant MBP? Kirk (2011) recently suggested that the normalisation of innovation by teachers was a concern for the legitimacy of MBP. Similarly, Curtner-Smith et al (2008) warned against the cafeteria-style adoption of Sport Education; the very thing that Brownlee (2011) was advocating in his practitioner piece. If MBP is to serve as a starting point for curriculum praxis (Jewett et al 1995) it appears inevitable that teachers will 'bastardise' any model that they use. But what level of adaptation is acceptable? In his early work on teacher-initiated innovation (TII) Kirk (1986, 328) suggested that while teachers may have reference to the 'same' innovative idea their implementation of the idea "involves each teacher in diverse and dissimilar actions." Kirk (1986) went on to suggest that in reality innovation is ambiguous, untidy, inconclusive and murky and fails to acknowledge the evolutionary nature of TII. Consequently, it needs to be acknowledged that teachers need support to use innovations such as MBP.

Lund, Gurvitch and Metzler (2008), in their work at Georgia State University, found that school-based teachers who cooperated with students in the teacher education programme learnt about MBP by watching the pre-service teachers teach. This suggests that teachers are learning about MBP as a result of their proximity to the students – almost through osmosis – rather than as part of their own professional development. In acknowledging this haphazard learning process Lund et al (2008) surmised that the decision to use MBP had been the faculty's and not the students and that the faculty had had little to do with the cooperating teachers and their understanding of MBP. They concluded that knowledge about MBP is essential for adoption,

that adoption is more likely if it take place in a compatible environment and that the work it takes to implement MBP must be seen as being worth the effort. Lund et al (2008) suggested that research be undertaken to explore the type of materials needed to support the implementation of MBP by helping to overcome the potential barriers to teachers' learning about MBP.

Conclusion

In her exploration of curriculum change in the post-modern world Macdonald (2003) likened innovation to a stone hitting a henhouse roof i.e. it causes a lot of excitement and noise which initially unsettles the chickens but things soon settle down again quickly enough of their own accord. In other words, nothing actually changes. With all due respect to many of the studies undertaken about MBP and curriculum reform in physical education, this is the type of non-change that we caught up in. Kirk (2011) suggested that educational change does not occur merely as the result of good ideas that generate interest and enthusiasm among teachers, but little action. Instead it is about sustaining these ideas beyond the initial period of delight and developing them into the working practices of teachers and schools, in fact into the very fabric of how the "meta-practices" (Kemmis and Grootenboer, 2008) of physical education are constructed. Hargreaves and Fullan (2009, Intro. Para. 7) stated that "the challenge here is no longer just how to have a theory of action that can implement particular changes, but how to develop one that can choose between changes, prioritize them, and create coherence among all of them."

Those who advocate the use of MBP as the best alternative conception of physical education need to follow Hargreaves and Fullan's (2009) lead and ensure that we keep doing the right things right without getting distracted by what is wrong. Furthermore, all this needs to occur with the engagement of all those involved and at a pace that maintains the momentum

without burning out the practitioners, through an agenda that is both manageable and coherent. Of primordial importance should be the development of sustainable practices and this means that all of us need to challenge our assumptions about schools, schooling, learning and young people (MacDonald 2003) and help create learning communities that foreground the needs and interests of education and which consider what, where and how pupils learn (Macdonald 2004).

Teachers should be in the vanguard of the drive to find out what we are getting right (Hargreaves and Fullan 2009; MacPhail 2007). The purpose of this paper was to explore what teachers' reported perceptions of MBP were and in what ways practice is changed as a consequence of using them. What has been shown is that when collaboration occurs between teachers and researchers and between schools and universities single models can form a central strand of getting things pedagogical right in physical education. However, it also shows that true MBP does not yet exist in our literature and nor have we addressed the tension that exists between model-makers and curriculum praxis. We aspire to MBP serving as a fulcrum for the interdependence and irreducibility of learning, teaching, subject matter and context that Haerens et al (2011) and Rovegno (2006) placed at the heart of pedagogical endeavours. However, more work is needed in this area if we are to begin to move individual models beyond their thirty-year apprenticeship as solitary innovations and truly aspire to a models-based approach to teaching in physical education. We need to find ways of supporting teachers in their use of alternative MBPs. Creating and sustaining collaborations between schools and universities, offering ongoing professional development to practicing teachings and changing the way we teach teachers through PETE, could all be ways of beginning to achieve this. Currently we have failed to change what is done in the name of physical education and while MBP has the potential to be more the great white hope so many advocate rather than a white elephant we need to do more to make this a reality.

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