

Pre-service teachers' experiences of learning about and through models-based practice

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Models of teaching – or pedagogical models – represent approaches to teaching practice based on coherent sets of principles and strategies that support student achievement across learning domains (Casey, 2014; Kirk, 2013; Metzler, 2011). Most teachers, regardless of subject area or divisional speciality (i.e., elementary or secondary) are likely familiar with educational models such as Cooperative Learning (see Slavin, 1990), which makes use of strategies such as Think-Pair-Share and the Jig-Saw method to support students in successfully achieving educational outcomes. Models that guide teaching and learning do not represent a particularly new idea; Joyce and Weil (1972) first published their text *Models of Teaching* over 40 years ago, which is now in its 15th edition. However, recent developments have recognized the limits in relying on one model to meet the complexity of learners' needs alongside multiple curricular outcomes (Haerens, Kirk, Cardon, & De Bourdeaudhuij, 2011; Lund & Tannehill, 2015). This has led to advocacy of using multiple models, requiring teachers to adopt a models-based (plural) approach, commonly referred to as Models-Based Practice (MBP) (Casey, 2014; Metzler, 2011).

MBP, a “contemporary pedagogical approach organized around the implementation of multiple and diverse pedagogical models chosen to support students in achieving specific learning outcomes” (Baker, 2016, p. 47) has had a notable impact in physical education (PE), particularly in the last 15 years. Specifically, MBP has been identified as one of the most promising means to bring forth sustained curriculum renewal in PE (Gurvitch, Lund & Metzler, 2008; Haerens et al., 2011; Kirk, 2013). This comes following the shortcomings of “traditional” approaches to PE, which are dominated by multi-activity curricula comprised of short disconnected learning units or modules and overwhelmingly taught through direct instruction. For example, a traditional model of PE tends to involve students participating in units of 5-10 lessons where they would be exposed to a variety of activities, predominantly sports, with the intent of developing skill proficiency through the use of drills and direct instruction. This model has been referred to as a “one-size-fits-all” approach (Kirk, 2013) which privileges competitive sport, is rigid and requires uniformity, favours dominant aggressive male players, marginalizes and even alienates lower skilled boys and girls, and ultimately results in a place where self-concepts are crushed and intimidation and alienation are the norm (Ennis, 1999; Hickey, 2008; Tischler & McCaughthry, 2011). In sum, these approaches limit learners' movement confidence and competence, and provide inequitable opportunities for learners, particularly those who do not exhibit high levels of athletic prowess (Ennis, 2013).

Given that MBP prioritizes participants, quite rightly most research on MBP has paid attention to both pupils' and teachers' learning and engagement with pedagogical models in school contexts. However, there is a need to also understand the experiences of pre-service teachers (PSTs)

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as they learn about and through MBP within physical education teacher education (PETE) contexts. The purpose of this research is to examine pre-service teachers' (PSTs) experiences of learning MBP across several PETE course content areas: (1) Movement Concepts (which introduces principles and pedagogies of fundamental movement and various forms of dance), (2) Educational Gymnastics, and (3) Territorial Games (consisting of lead-up and formal team games). We focus our attention on PSTs' learning of MBP in two ways. First, we consider their experiences of learning *about* several instructional models: Teaching Personal and Social Responsibility (TPSR), Cooperative Learning (CL), Peer Teaching (PT), and Teaching Games for Understanding (TGfU). Metzler (2011) suggests that PSTs should learn *about* each model's: foundations, teaching and learning features, and implementation needs and modifications. Second, we followed Curtner-Smith, Hastie, and Kinchin's (2008) advice to ensure that PSTs were provided with opportunities to learn about the model beyond classroom-based lectures by working in the gymnasium, on the playing field, and in schools. We conceptualized this as learning *through* the models, where PSTs had opportunities to experience what it was like to be positioned simultaneously as a learner and a teacher in, for example, a PE content unit taught using TPSR. Although coupling learning *about* and *through* models appears as common sense, there is scant evidence to describe PSTs' experiences of this type of learning of MBP in PE.

Though the research base on PSTs' learning about instructional models has grown along with the trajectory of MBP research more broadly, most studies have focused on learning and implementation of one model. For example, recent research has documented and analyzed pre-service teacher learning about TGfU and other Games-Centred Approaches (Harvey, Cushion, & Sammon, 2015), Sport Education (Deenihan & MacPhail, 2013), and TPSR (Lee, 2012). With the exception of a monograph published in the *Journal of Teaching in Physical Education* (Gurvitch, Lund, & Metzler, 2008) conducted at Georgia State University (GSU), few accounts exist of PSTs' experiences of learning *multiple* models.

In the GSU studies, despite many of the PSTs having no experience with one or more models as school pupils, they were able to effectively implement PE content using a MBP approach in school settings with a reasonable degree of fidelity to each model's benchmarks (Gurvitch, Blankenship, Metzler, & Lund, 2008). Furthermore, Gurvitch, Blankenship, et al. (2008) state that, while probable, "student teachers did not explicitly attribute [MBP as the basis for pedagogical content knowledge] to their PETE program" (p. 482). Thus, while it might be assumed that classroom and gymnasium-based learning experiences in the PETE program were positive, we were left wondering about the nature of those experiences. This research aims to build on the small body of research exploring PST learning *about* and *through* MBP as an innovative approach to teaching and learning in PE. The following question guided the research: What are PSTs' experiences of learning *about* and *through* MBP?

Theoretical framework: Pedagogies of teacher education

Pre-service teacher education has long been criticized for being a "weak intervention", due in large part to the 12 years of schooling that all PSTs have had prior to entering higher education (Lortie, 1975). PSTs' experiences of teaching during their time as school pupils (known as the *apprenticeship of observation*) profoundly shape their ideas and beliefs about teaching practice (Lortie, 1975). Yet, these experiences are often limiting because they fail to provide the learner with a framework to understand the reasons underpinning a teacher's practice: the theories, beliefs, and thinking that guide the decisions teachers make while planning, enacting, assessing, and reflecting in classrooms. Loughran (2006) suggests that many PSTs view teacher education as a time to locate the familiar practices they experienced as pupils, rather than an opportunity to discover strategies and approaches supported by research on teaching. In an attempt to disrupt the power of the

apprenticeship of observation, Loughran articulated a theoretical framework for a pedagogy of teacher education, comprised of three parts: teaching about teaching, learning about learning, and learning about teaching. Opening the door to pedagogical innovations such as MBP requires teacher educators to teach about teaching by developing, modeling, and articulating not only the strategies and approaches they believe promote powerful learning for school pupils but also to dissect and problematize the thinking behind their teaching practice as it happens (Loughran, 2006). Fletcher and Casey (2014) analyzed and shared the ways they developed and enacted pedagogies of PETE as teacher educators using MBP, noting the difficulty in doing so. However, in order to gain a richer and more rigorous understanding of the complexities of pedagogies of teacher education, researchers should actively seek the perspectives of PSTs (Loughran, 2006).

We use two elements of pedagogy of teacher education theory to help explain and better understand ways PSTs grapple with the complex relationship between learning about learning and learning about teaching. In order to simultaneously understand the connections and differences between the two concepts of learning about learning and learning about teaching, it is worth quoting Loughran's (2006) ideas at some length:

Students of teaching need to be conscious of their own learning so that they overtly develop their understanding of the teaching practices they experience in order to purposefully link the manner in which they learn in a given situation with the nature of teaching itself. Therefore, for students of teaching, their learning agenda includes learning about the specific content being taught, learning about learning and learning about teaching. All of these inevitably shape their developing understanding of the complexity of teaching and learning but may not be fully appreciated if not explicitly linked to their learning agenda. (pp. 4-5).

However, when PSTs “seek the familiar” in their experiences of learning to teach, it can be a challenging proposition when they are confronted with innovations such as MBP, which can present new ideas about learning, new ideas about teaching, *and* new considerations of “who” a PE teacher is and what they need in going about their roles (Sirna, Tinning, & Rossi, 2010). Thus, the shift from school pupil to university student/PST to practicing teacher not only requires developing a new appreciation for the complex knowledge required to teach PE in innovative ways, it requires a new way of identifying oneself.

Method

Teaching and schooling are cultural processes, embedded in cultural routines, symbols, meanings, and systems (Britzman, 2012). As such, an ethnographic approach was used to explore the cultural issues associated with PSTs' learning of MBP in PE and uncover the shared meanings of the group (i.e., PSTs). Rich description is central to ethnography so the reader can vicariously experience the setting and situation encountered by the researcher. It requires multiple forms of naturalistic data that represent a deep and trustworthy account of the participants' life-world (Le Compte & Preissle, 1993). Being immersed in a shared reality provides an intimate perspective of group dynamics and understandings.

Context of the Study

Setting and Participants: The research was set in an undergraduate PETE program at a medium-sized Canadian university. Participants were nine PSTs (6 male, 3 female), in their second and third years of the four-year program. The overarching teaching and learning culture experienced by these participants while school pupils was one mostly couched in traditional PE pedagogy (i.e., a multi-

activity curriculum taught mainly through direct instruction). While there are undoubtedly differences in each participant’s experience, interviews generally supported the view that their experiences could be described as “traditional PE”. Furthermore, interviews confirmed participants’ experiences with MBP in any context were limited to the three undergraduate courses described in this study. As such, the idea of MBP meant entering a new culture of teaching and learning in PE for participants. Table 1 shows the courses each participant was enrolled in, the models they were exposed to, and the order in which they were exposed to the models.

Table 1
Research participant course enrollment and model learning experiences

Participant	Course Enrolment	Models Learned			
		TPSR	CL	PT	TGFU
Julie	Movement Concepts	x	x		
Scott	Movement Concepts	x	x		
Elizabeth	Movement Concepts Educational Gymnastics	x	x	x	
Brian	Educational Gymnastics Territorial Games		x	x	x
Craig	Educational Gymnastics Territorial Games		x	x	x
David	Movement Concepts Educational Gymnastics Territorial Games	x	x	x	x
Gerald	Movement Concepts Educational Gymnastics Territorial Games	x	x	x	x
Hunter	Movement Concepts Educational Gymnastics Territorial Games	x	x	x	x
Lourdes	Movement Concepts Educational Gymnastics Territorial Games	x	x	x	x

Model Fidelity

Hastie and Casey (2014) argue that the following elements are essential to understand researchers’ interpretations of MBP: (a) rich description of the curricular elements of the unit, (b) a detailed validation of the model implementation, and (c) a detailed description of the program context (including previous teacher and student experiences of the model or with MBP). While we feel it is important to describe the steps we took to reach a degree of fidelity to the models, we also want to remind readers that our research is not to understand the effectiveness of the models on student learning but to understand PSTs’ experiences of learning about and through the models. With this in

mind, it is plausible that aligning with each model’s benchmarks can serve as a barrier or facilitator in PSTs’ learning.

Course descriptions: Participants and data were drawn from four 13-week courses taught by Kellie across three academic terms: Movement Concepts (taught twice), Educational Gymnastics, and Territorial Games. PSTs were supported in their learning through an emphasis on concepts, skills, strategies, and pedagogies deemed important for enabling student learning of the course content. Due to the recognition of MBP as a way to develop instructional effectiveness through combining knowledge of content and pedagogy (Metzler, 2011), MBP formed the basis for course construction and delivery across the three courses. The selection of particular models was purposefully planned, implemented, and discussed with PSTs. During each course and in interviews PSTs were asked why they thought Kellie would choose the model being studied for the particular course, how the model could enable achievement of certain learning outcomes related to the content of the course (and the outcomes related to the content being learned to enact in K-12 schools), how the model connected to the course content and content of other courses, and what each of the model’s benefits and drawbacks are.

The website accompanying Metzler (2011) provided much of the material used to guide course development, lesson planning, and implementation such as benchmark sheets, lesson plan templates, and model unit plans. Table 2 provides descriptions of the courses taught, including examples of how PSTs learned *about* and *through* the models.

Table 2
Course descriptions

<u>Course</u>	<u>Hrs/ Wk</u>	<u>Model/s Used</u>	<u>Purposes of Course</u>	<u>PSTs’ Learning <i>About</i> Models</u>	<u>PSTs’ Learning <i>Through</i> Models</u>
Movement Concepts	5.5	TPSR CL	Introduce concepts, strategies, and skills for teaching movement concepts and various forms of dance (e.g., creative and folk). Grounded in Laban’s (2011) movement education, supporting: progressive problem-solving; cognitive and creative involvement; exploration, analysis, and application of knowledge to arrive at solutions; and teacher-as-facilitator.	Required to plan lessons and complete several assignments using TPSR benchmarks ¹ (e.g., TPSR lesson format and reflections on class experiences). Each time CL was used by Kellie, pre-service teachers were guided by documents describing common roles in CL (e.g., coach/leader, recorder, presenter, organizer, time keeper, and errand monitor) (Dyson & Casey, 2016; IRA/NCTE, 2004).	Kellie taught the course using both TPSR and CL to support empowerment, transfer, relationship building, and reflection (TPSR), and have students assume classroom roles and responsibilities through CL strategies (e.g., Think-Pair-Share, Jigsaw, deliberately planned debriefing sessions, outside of class reflection questions, and the use of a CL roles sheet) (IRA/NCTE, 2004).
Educational Gymnastics	2.25	PT CL	Introduce concepts, strategies, and skills	PT benchmark sheets were used by PSTs to develop	PSTs assumed student tutor and student learner

¹ Benchmark sheets for all models were accessed from the following website that accompanies Metzler (2011): <http://www.hhpcommunities.com/metzler/>

			involved in educational gymnastics. Given overlap in enrolment from the Movement Concepts course (which used CL), PT was emphasized throughout the course.	lesson plans and to self-assess their knowledge and use of PT in a team teaching assignment. This included reflecting on the instructional effectiveness of the team teaching experiences using PT.	roles while engaging in course content. During team teaching PSTs assumed the role of facilitator (i.e., teacher) which was modelled on a daily basis by Kellie.
Territorial Games	5.5	TGfU	Introduce concepts, strategies, and skills involved in teaching and learning in territorial games using a tactical games approach through the TGfU model.	PSTs completed tasks that facilitated their learning <i>about</i> TGfU, including: creating a TGfU website; presenting to peers about assessment in TGfU; developing and implementing a lesson plan incorporating TGfU benchmarks, and; completing a reflection on their implementation of the TGfU lesson.	Kellie planned and modelled TGfU lesson plans, emphasizing TGfU benchmarks such as: organizing learning tasks based on a tactical problem; introducing content using game form to identify tactical and skill needs of students; using deductive questioning to solve tactical problems, and; providing specific, immediate, positive and constructive feedback.

In the Movement Concepts course, Kellie’s lesson plans were formatted and implemented adhering to the five parts of a TPSR lesson (Hellison, 2011): (i) relational time, (ii) awareness talk, (iii) physical activity, (iv) group meeting, and (v) individual reflection. PSTs were encouraged to use Metzler’s (2011) text and website to help complete their work related to TPSR (lesson plans and course assignments). In addition, a peer reviewer used the Tool for Assessing Responsibility-Based Education (TARE) (Wright & Craig, 2011) to assess Kellie’s implementation of TPSR during one two-hour class. PSTs also used the TARE to provide feedback to Kellie about frequency and quality of implementation of TPSR themes. Both validation sources revealed a reasonable degree of fidelity with TPSR. Occasional inconsistencies were noted in Kellie’s practice regarding “transfer” (making connections to the application of life skills in other settings).

In both the Movement Concepts and Educational Gymnastics courses, Kellie used a CL Student and Teacher Benchmarks checklists (Metzler, 2011) in planning, implementing, and self-assessing these lessons. A non-participant observer used the teacher checklist to peer-assess Kellie’s implementation of CL during one two-hour Movement Education class while PSTs used the student checklist to provide feedback to Kellie about her use of CL benchmarks. Although a reasonable degree of fidelity was noted in Kellie’s implementation of CL, some shortcomings were noted by PSTs in the formation of heterogeneous groups (some felt group allocation was unfair), and in their ability to gain a strong understanding of cooperative structures.

To assess the use of PT in the Educational Gymnastics course, teacher, learner, and tutor (the role adopted by the peer who is teaching) benchmarks checklists (Metzler, 2011) were used by Kellie. The checklist was used by PSTs on a daily basis as both participants *in* the course content who assumed one or both of the roles, as well as *with* the course content during a course assignment requiring them to plan, implement, and reflect upon a PT lesson. Kellie conducted fidelity checks in the form of participant observations of how PSTs implemented the model in both team teaching

and daily lessons. As well, Kellie gathered exit slips and student assignments (e.g., team teaching reflection, lesson plans) to understand both students' perceptions of and their ability to implement models throughout the course, which adhered to PT benchmarks and lesson plan formatting (see <http://www.hhpcommunities.com/metzler/>). Although PSTs referred to and applied tutor and learner benchmarks each lesson, both PSTs and Kellie struggled to consistently adhere to the benchmarks while also attending to the content of educational gymnastics.

In the Territorial Games course, teacher and student benchmarks for TGfU (Metzler, 2011) were used by Kellie to guide lesson planning, implementation, and reflection. In addition, several lesson plans designed specifically for tactical games approaches (see Mitchell, Oslin, & Griffin, 2013) were adapted for use in the course. As part of a course assignment, PSTs used Metzler's (2011) benchmarks and lesson plan format in developing plans and assessment.

Teacher and student experiences with the models: Kellie was most familiar with TPSR, having used it in her K-6 PE program for ten years, as well as using it in PETE programs for three years. She had also used CL in Grade 5 and 6 classrooms for four years. Prior to the research, Kellie had some experience with TGfU, using it in distinct parts of two PETE courses. She had never used PT prior to this research. As indicated in the results, participants recalled never knowingly being introduced to any of the models as school pupils or as PSTs.

Data Sources and Analysis

Three data sources were gathered. The main source was individual semi-structured interviews conducted by Kellie. Because Kellie was the teacher educator-researcher and this raised issues related to power dynamics, the Interdisciplinary Committee on Ethics in Human Research required all three interviews be conducted after participants had completed all three courses and had received their grades from the Registrar's Office. This meant there was a 10-month gap between the first course where MBP was taught and the first interview for 7 participants. For the remaining two, there was a 5-month gap.

In the first interview, Kellie sought an overview of participants' PE teaching and learning backgrounds; that is, the cultures of PE they were exposed to as school pupils and as PSTs in the PETE program, respectively. From this interview we aimed to understand: (a) whether they had experienced MBP as school pupils, and (b) their general experiences of MBP in the PETE program. The second interview probed more deeply into participants' responses from the first interview, particularly regarding specific experiences of each of the models in the PETE program. We also sought to understand participants' opinions about using MBP in their future practice, including their understanding of how certain models allowed students to achieve particular learning outcomes. In the third interview we aimed to clarify previous responses and interpretations (as a way of member checking) and determine if we had achieved saturation about their experiences of learning *about* and *through* MBP.

Second, Kellie conducted a focus group interview with one group of four and one group of three participants, respectively. The purpose of the focus group was to encourage group discussion and potentially elicit new responses that extended beyond the individual interviews. Third, we gathered post-lesson reflections generated by students in several courses taught by Kellie. The research ethics board required all coursework used as data to be gathered after participants' final course grades for all three courses had been submitted to the university's Registrar.

Data were analyzed in an iterative process, with two major phases involved. First, interview and focus group transcripts were read line-by-line, and then coded. Data were analyzed inductively to identify concepts, themes, and ideas that emerged from the research questions rather than existing theories. Using a constant comparative approach (Corbin & Strauss, 2008), critical incidents, challenges, and contradictions in participants' data were identified in the coded data. In several

instances, we used the artifacts to support or contradict the interview/focus group data. Second, we returned to the data taking a deductive approach, where content structures from Loughran's (2006) pedagogy of teacher education theory guided the analysis, specifically: learning about learning and learning about teaching. Coded data from both steps were then merged, interpreted, and categorized according to Loughran's (2006) theory.

Results

No participants reported having been knowingly exposed to MBP in PE during their time as K-12 pupils. As a result, much of their early exposure to MBP in the PETE courses involved coming to terms with models and making sense of them: what a model is, understanding how and why it works, and understanding why it was preferred to the approaches they had experienced. To make matters more complex, PSTs had to make sense of models from two perspectives simultaneously: as a student learning what it feels like to learn *through* a model, and as a student of teaching learning *about* the model and its benchmarks for use in practice.

Tensions in learning about and through MBP as a learner and as a teacher

Although the expectations to position oneself simultaneously as a learner and a teacher are arguably complementary in many PETE programs, several participants experienced some tensions in managing multiple positions. Even though participants reported being supported by Kellie in their learning, eight out of nine described their learning *about* and *through* MBP as challenging. An underlying reason was that MBP was completely new to them – something they were not exposed to during their apprenticeships of observation (Lortie, 1975). As such, MBP could be viewed as a new culture of learning and teaching in PE. MBP thus disrupted many participants' assumptions about what is required of both learners and teachers.

For example, Craig stated that he found the ideas underpinning MBP easy enough, but learning to apply them was difficult because it took a lot of "trial and error" to think about how it might be enacted in schools. Similarly, in one reflection Julie suggested it was difficult to consistently maintain each model's benchmarks in her lesson planning. Brian suggested his challenges came from the depth of MBP, which caused him to rethink what knowledge was required to teach PE. Several PSTs were more specific in identifying the challenges of learning about MBP, suggesting the main difficulty was not necessarily in learning the content of MBP but in constantly (and consciously) positioning oneself simultaneously as learner and teacher. For example, David said:

I found it challenging to be in the classroom and we were students...Then we had to leave the classroom and become the teachers and then write down our reflections about it...I found it hard because I really didn't have an understanding about what [MBP] was... Definitely it was hard being a student and a teacher.

Elizabeth described a similar challenge:

I think the most difficult thing was that [MBP] was so new and I had never experienced it before so it was a lot of getting used to the fact that I'm not just learning this for myself, I'm learning how to teach this to somebody... it was challenging to even think [in terms of]: this is really going to help me, I need to think that I am a teacher, I need to accept and remember these things because it is a part that I want to teach when I get out [into the real world of teaching].

Comments such as those from David and Elizabeth shed new light on the challenges of learning about and through MBP. Previously, much of the research on MBP has exposed the difficulties of learning pedagogical concepts, skills, and strategies that often differ from those PSTs were exposed to as school pupils. This leads to the belief that the main challenges lay in engaging with a new approach to practice: it is primarily a practical problem. While these issues were certainly mentioned by our participants, the struggles to begin identifying oneself as a teacher who uses MBP were also revealed as a key factor in learning MBP. This suggests that PSTs' challenges are as much a matter of identity as they are of learning innovative practices.

The notion of participants' identities influencing their learning was further supported by their preferred ways to engage with MBP. In support of claims that PSTs' learning of MBP should go beyond learning *about* models (Curtner-Smith, et al., 2008), most participants preferred learning *through* the model(s). For example, Scott felt learning *about* and *through* were both necessary, but learning *through* the model "made it easier compared to just sitting in a classroom and trying to obtain things through a book and writing notes and things like that".

Beyond being "easier", Hunter identified learning *through* TGfU as the only way this new and unfamiliar pedagogy made sense to him. Julie agreed, stating she preferred to go beyond learning *about* CL in the Movement Concepts course:

Well, just not sitting there [and] not just learning the techniques... We would learn a game through those models and actually learn about the models as we go. I found it made it more concrete; it brought the theory to life.

Scott also spoke of learning *through* models as being beneficial to his learning. In one post-lesson reflection he wrote:

I have found that reading about instructional models (and other concepts) prior to class and then seeing them implemented over and over again during in-class activities and games really helps to benefit my understanding of them... I feel that learning about these instructional models through experiencing them has been the most beneficial for me.

With this in mind, seven of the nine participants reported how learning *about* the models made more sense to them as they learned *through* the models and as each course progressed. This was because: (a) they were being exposed to more models with each course taught by Kellie and were building upon existing knowledge and experiences, and (b) as they moved through their PETE program they were developing identities as teachers who could or would use MBP; their identities were integrating that of learner with that of teacher. For example, five of six participants who completed the Territorial Games course (the final PETE course grounded in MBP) specifically identified it as the point at which their learning of MBP began to become integrated – they were able to see how their learning about learning through MBP informed their learning about teaching MBP (Loughran, 2006).

Other participants expressed ways in which their cumulative experience and knowledge helped them make sense of MBP as they progressed through the PETE program. Lourdes completed all three courses taught by Kellie. In a focus group she suggested that her learning became integrated in the Territorial Games course because there had been so many similar experiences with MBP in previous courses; she was able to build upon her previous learning to make sense of what she was learning in the present. Of the layering of several courses using MBP, Lourdes said:

It gives you time to really understand it. ‘Cause, like thinking about it now, doing [Territorial Games], it was like: “Oh, I remember learning all this and this is so much easier than it was back when I was taking [Educational Gymnastics]”. So it just gives you that time to kind of like comprehend it all and really grasp the understanding of it so that you know now: “Ok, this is something I can use”.

From student of learning about MBP to student of teaching using MBP

Through developing deeper understanding of MBP and its benefits, several participants began to see how MBP could represent a foundation for their future teaching practice. For instance, Craig, David, Hunter, and Brian indicated they were highly likely to use MBP. Among their main reasons were that MBP was perceived as offering support during their induction years through providing: a coherent structure or approach for their teaching; an approach geared toward student learning needs; support to develop a sense of community in the class, and; an alternative to the type of PE they had experienced as K-12 pupils.

One way a shift occurred in participants’ identities was through understanding the necessity of developing pedagogical content knowledge. Several participants felt their main “need” initially was to learn and develop knowledge of physical activity content; few had considered the pedagogical knowledge required to deliver that content. In the focus group, Julie, Scott, and Craig first reported feeling that MBP took time away from learning physical activity content, however, further experiences with MBP and development of their identities as future teachers led them to believe it was a necessary tradeoff. For example, Julie said:

If you’re looking at it strictly from a dance class [perspective]..., then focusing on the models does take away from how much content you can learn. But given that the whole point is to learn the best procedure to teach [that content] then it’s definitely beneficial to have the MBP embedded.

Although many participants came to see the value of learning *about* and *through* MBP in the campus-based PETE program, some still questioned whether MBP could work in schools. Several completed a course (not taught by Kellie) where they were placed in local elementary schools for 6 weeks, shadowing a cooperating teacher. Many found this to be a valuable experience, particularly in the development of their identification as beginning teachers. However, with this development in their identities many had begun to consider the multiple demands faced in the workplace; demands that some felt might take priority over their commitment to developing their skills and understanding of teaching using MBP.

Several expressed doubts in their confidence to implement MBP during their early years. The doubts and lack of confidence were underpinned by the perceived need to be considered an “effective” teacher. We interpreted their developing conceptualization of “effective” as being aligned with a teacher’s ability to deliver a mandated curriculum or meet the perceived expectations of their future school contexts. Following coursework, Brian and David both expressed a high likelihood of implementing MBP in the future, however, after their teaching placements both expressed doubts, which were based on being faithful to a prescribed curriculum and the perceived rigidity of models. Scott also acknowledged that using MBP would depend “on [the] context of [the] school, their expectation, and what’s already there”. Comments such as these suggest a shift in participants’ identities to more strongly reflect a custodial approach to PE once embedded in schools (Lawson, 1983).

Participants’ uncertainties about using MBP were clearly exposed during a focus group interview. For example, at the beginning of the focus group Craig stated a “100% chance” of

implementing MBP, claiming he had been using TGfU and CL in his 6-week school placement. He said: “I’m going to use MBP, so that alone affects how I’m going to teach”. However, as the focus group progressed and other participants contributed their views, he changed his tack suggesting the likelihood of him using MBP was “very slim because...this is the only way I’ve been exposed to it. Like, I haven’t been exposed to it since [Kellie’s] two classes”. Scott echoed Craig’s views suggesting that the further removed he became from the course as a student and the closer he came to becoming a teacher in schools, the more unsure he was of using MBP. Scott said: “I anticipate my first couple of years teaching to be very difficult. The workload would be very high trying to get comfortable... I’m just not sure if my mind would be there”.

Along with Hunter who had previously reported no challenges in learning *about* and *through* MBP, Elizabeth and Lourdes remained the most committed to using MBP following graduation. Elizabeth drew from her experiences in the campus-based courses and volunteering at an afterschool program to justify her commitment. Interestingly, her focus on MBP was related to the ways in which it allowed her to identify as a student-centred teacher, one focused on providing positive experiences and outcomes for learners. She said:

I benefited from it [in the PETE courses] and I think all of us benefited from it and got a lot from it. When we went to the schools trying to do what we were learning with the students, I saw that it worked for them too...

Because MBP was different from the approach taken by her cooperating teacher, Lourdes felt she was taking a risk using MBP in her first in-school placement. However, she believed the risk paid off by considering how she would have benefited from being taught through MBP as a K-12 pupil. Furthermore, in solidifying her developing teaching identity, Lourdes expressed a desire that “physical education moves forward”, and saw MBP as one way of advancing the field.

Discussion

The purpose of this research was to examine PSTs’ experiences of learning *about* and *through* Models-Based Practice (MBP). The models PSTs learned about and through were Teaching Personal and Social Responsibility (TPSR), Cooperative Learning (CL), Peer Teaching (PT), and Teaching Games for Understanding (TGfU), each of which was taught in one of three distinct courses. Loughran (2006) identifies three key elements in a pedagogy of teacher education: teaching about teaching, learning about learning, and learning about teaching. Given recent attention to the challenges of teaching about teaching using MBP (Fletcher, 2014), we focused our attention on learning about learning and learning about teaching to examine PSTs’ experiences of learning MBP. In identifying a gap in understanding PSTs’ learning about and through multiple models, it was our aim to build on a small base of previous work (Gurvitch, Lund, & Metzler, 2008) and explore PST learning of MBP.

We had three main findings. First, our research supports previous claims by Curtner-Smith, et al. (2008) that PSTs should be provided with extensive opportunities to experience what it is like to be positioned as a learner in a model (learning *through* the model) in addition to learning *about* the model, where they should be exposed to thinking about using one or more models as practitioners. Learning *about* models was achieved through a variety of strategies. For example, PSTs engaged with several texts on MBP (e.g., Metzler, 2011) and created electronic materials such as websites and presentation slides about specific models. They were also exposed to Kellie’s lesson planning using particular models and their benchmarks, which she implemented in the PETE courses; this informed how they designed, enacted, and reflected upon peer taught lessons themselves. Students gained insights into learning *through* models by participating in classes as both a teacher and student. For example, they participated in lesson developed both by Kellie and their peers, each of which was

guided by a model's format and benchmarks. Team teaching provided learning through the model from a new perspective, that of teacher. While challenging, experiencing the model for themselves as learners allowed PSTs to better make sense of each model's features and benchmarks. In turn, they were able to gain deeper understandings of how they might use the models themselves as teachers in the future.

Second, participants explained the positive influence of learning *about* and *through* multiple models (Gurvitch, Blankenship, et al., 2008). For example, several participants suggested their first exposure to a model led to uncertainty and confusion. However, with each course experience where a new or previously taught model was introduced, the idea of MBP became clearer and they were able to understand both the benchmarks and benefits of the models more readily. This finding leads us to suggest that while exposure to one model can have a positive influence on PSTs' perspectives on the value of MBP (Harvey, et al., 2015), incorporating multiple models across multiple courses offers the greatest promise for MBP to be positioned as sustainable reform in teacher education.

Third, PSTs' identities played a central role in not only helping them to understand the models but also in coming to terms with how they might incorporate MBP in their future practice. Several participants claimed that learning *about* and *through* MBP allowed them to envision and identify themselves as teachers because they began considering the influence MBP could have on pupil learning from a teacher's perspective. This led them to think about their own learning differently, moving from a heavily content-driven focus, to recognizing the necessity of developing pedagogical content knowledge (Metzler, 2011). Data from participants suggested some may be likely to adopt a custodial orientation to teaching PE once situated in schools (Lawson, 1983). Given the multiple concepts, ideas, and new ways of thinking PSTs are grappling with throughout pre-service teacher education, these findings support claims about the tremendous challenge and complexity of having innovations be taken up by PSTs. Clearly, uptake of innovations such as MBP involves far more than simply learning new strategies.

We acknowledge several limitations to our research. First, we acknowledge that PSTs who agreed to participate were likely to have had positive experiences with both MBP and with Kellie, who was positioned as teacher educator-researcher. Future studies might actively recruit from a wider population of PSTs over longer periods of time and interviews be conducted by a colleague familiar with MBP. From our own experience, however, we understand this can be an ideal rather than realistic situation, particularly when working in small departments where there may be no colleagues with strong knowledge and understanding of MBP to support data gathering. This leads to our second limitation: in the absence of colleagues knowledgeable about MBP to provide rigorous validation about model implementation, this meant we could not rely heavily on an external observer's perspectives to justify the extent to which our implementation of some models aligned with their benchmarks. Future research could include video recording the teaching-learning sessions and enlisting the support of an expert in the field to conduct observational fidelity checks. Last, adopting pedagogical innovation often requires a shift in teaching identities over time. The relatively short duration of this study means we remain uncertain about whether participants' identities and/or orientations (that is, custodial or innovative) shifted again following graduation and upon entering into the workforce. In order to gain a more in-depth understanding of ways to continue supporting beginning teachers in implementing MBP as a pedagogical innovation, more longitudinal research designs like those conducted by Gurvitch, Metzler, and Lund (2008) are necessary.

In conclusion, although it is challenging for PSTs to simultaneously learn about and through innovative forms of practice such as MBP, this complex degree of engagement in their learning about teaching may offer promising ways to disrupt the salience of the apprenticeship of observation and come to see effective forms of practice as often being very different from what they experienced as school pupils. Participants from this study demonstrated how learning both about

and through MBP (as one innovative approach to PE practice) supported the development of their identities as teachers of physical education who can both problematize past learning experiences and consider the possibility of teaching their future students in ways different from the ways in which they were taught. With that said, there remains work to be done to support new teachers in implementing innovative practices beyond their induction years, and further initiatives are warranted that track the extent to which newly graduated teachers adopt innovations such as MBP throughout their careers.

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