The challenges of models-based practice in physical education teacher education: A

collaborative self-study

1   Abstract

2   There are two purposes of this study. The first is to examine our experiences as

3   beginning teacher educators who taught using models-based practice (using the

4   example of Cooperative Learning). The second is to consider the benefits of using

5   collaborative self-study to foster deep understandings of teacher education practice.

6   The findings highlight the challenges in adapting school teaching practices to the

7   university setting, and the different types of knowledge required to teach about the

8   "hows" and "whys" of a models-based approach. We conclude by acknowledging the

9   benefits of systematic study of practice in helping to unpack the complexities and

10   challenges of teaching about teaching. Our collaborative self-study enabled us to

11   develop insights into the intertwined nature of self and practice, and the personal and

12   professional value of our research leads us to encourage teacher educators to examine

13   and share their challenges and understandings of teaching practice.

14   *Keywords:* teacher educators, pre-service teacher education, cooperative

15   learning, practitioner research, pedagogy

16

17   The challenges of models-based practice in physical education teacher education: A

18   collaborative self-study

19   The need for physical education to undergo pedagogical and curricular reform has led

20   some to suggest that unless radical change occurs the subject may have a short future; with

21   "futures talk" involving drastic reconceptualizing of the subject (Jewett, Bain, & Ennis, 1995;

22   Lawson, 2009; Penney & Chandler, 2000; Tinning, 2009). For example, Kirk's (2010)

23   contemplation of the prospects for physical education led him to identify three potential

24   futures: more of the same, extinction, or radical reform. While Kirk felt that *more of the same*

25   was most likely, he suggested this was little more than a stay of execution from the inevitable

26   slide into *extinction*. In order to avoid *extinction*, there has been a significant and growing

27   voice calling for *radical reform* that centers on a number of empirically researched and

28   theoretically informed pedagogical models (Metzler, 2011; Haerens, Kirk, Cardon, & de

29   Bourdeaudhuij, 2011).

30   The integration of multiple pedagogical models into a models-based practice (MBP)

31   has been acknowledged as one avenue for the type of pedagogical and curricular reform

32   desired by physical education "futurists" (Gurvitch, Lund, & Metzler, 2008; Haerens, et al.,

33   2011; Kirk, 2010). Specifically, MBP has been recognized as an alternative to the "current

34   and traditional 'one-size-fits-all', sport technique-based, multi-activity form" (Kirk, 2013, p.

35   2) that pervades many physical education programs. The benefits of a models-based approach

36   lie in the provision of opportunities for students to learn subject matter in some depth through

37   student-centered approaches, which address outcomes in multiple domains (i.e. psychomotor,

38   affective, and cognitive) (Metzler & McCullick, 2008). Evidence suggests that attending to

39   these diverse outcomes strongly influences the likelihood that students will engage in a

40   physically active lifestyle (Bailey, Armour, Kirk, Jess, Pickup, & Sandford, 2009).

41   However, if MBP is to become a sustainable means to pedagogical and curricular

42   reform, examination of the innovation needs to extend beyond school contexts. For example,

43   although research on the challenges of implementing MBP in schools has recently expanded

44   (Dyson & Casey, 2012; Harvey & Jarrett, 2013; Hastie, 2012), little attention has been paid

45   to the challenges of MBP in pre-service teacher education. Researchers at Georgia State

46   University (GSU) recognized this matter and conducted a large-scale study of how physical

47   education teachers learned "about and made decisions to adopt models-based instruction[1]"

48   (Gurvitch et al., 2008, p. 454). They considered the influence of the university physical

49   education teacher education (PETE) program at three stages of teachers' development: pre-

50   service (Gurvitch, Tjeerdsma Blankenship, Metzler, & Lund, 2008; Lund & Veal, 2008;

51   Metzler & McCullick, 2008), induction (Gurvitch & Tjeerdsma Blankenship, 2008), and

52   veteran (Lund, Gurvitch, & Metzler, 2008). Although there was general support for MBP

53   across all three stages of teachers' development, a key finding concerned the powerful role of

54   PETE faculty as change agents in pre-service and veteran teachers' decision-making

55   processes to adopt MBP (Metzler, Lund, & Gurvitch, 2008). While these findings hold

56   promise, the voice of the PETE faculty was largely silent. As such, while the GSU

57   researchers claim that their approach was impactful on the pre-service teachers who

58   completed the program, there was not a clear sense of how teacher educators made their

59   impact or the challenges they faced in doing so. When PETE programs have been identified

60   as perpetuating *more of the same* (Kirk, 2010), understanding the processes that lead to

61   successful implementation of MBP in the university setting is crucial. It is our belief that if

62   MBP is to become a preferred approach for physical education teachers, pre-service teacher

63   educators must similarly change how they teach. To this end, we used collaborative self-

---

[1] Gurvitch and colleagues prefer to use the term models-based instruction, while we prefer models-based practice (MBP). This term has gained increased significance on the field (c.f. Armour's (2011) book "Sport Pedagogy"). However it is beyond the scope of this paper to discuss this decision in detail and we direct the reader to Haerens et al. (2012) for a thorough discussion of the semantics behind the choice to use certain terms when referring to models in physical education.

64   study to examine the challenges we faced as two teacher educators who taught using MBP in

65   PETE programs.

66   A unique feature of our study is the examination of ==physical education== teacher

67   education practices through collaborative self-study. While several teacher educator-

68   researchers have demonstrated the benefits of using collaborative self-study to unpack the

69   complexities involved in teaching teachers (Bullock & Ritter, 2011; Kitchen, Ciuffetelli

70   Parker, & Gallagher, 2008; Petrarca & Bullock, 2013), there are few examples in the physical

71   education literature. The examination of teacher education practices is being increasingly

72   recognized as a powerful way to both understand and communicate the problematic and

73   challenging circumstances of learning to teach (Zeichner, 1999). As Loughran (2013)

74   suggests, teacher education is a key location where deep understandings of pedagogy can be

75   developed, and so the work of teacher educators as inquirers of pedagogy becomes central to

76   the mission of developing a commitment to strong and innovative teaching practice. Teacher

77   educators ==thus== have a responsibility to provide a glimpse inside their own teaching,

78   articulating the reasoning and assumptions behind the decisions they make while teaching,

79   thus making teaching a site of inquiry (Loughran, 2007). However, as Berry (2007) and

80   Bullock (2009) have shown, the complex nature of teaching sometimes means that teacher

81   educators are challenged or frustrated by trying to understand and explain their practice.

82   Although this task may prove difficult, it is worth undertaking because when pre-service

83   teachers are provided with access to thoughts and knowledge about problems of practice,

84   they are more likely to develop deeper understandings of pedagogy and teaching (Grossman

85   & McDonald, 2008).

86   **Theoretical Framework**

87   **Models-based practice.** The work of Metzler (2011) has been central to articulating a

88   practical and theoretical understanding of models in physical education. Metzler's definition

89   of a "model" includes three aspects: (a) the foundations, (b) teaching and learning features,

90   and (c) implementation needs. Metzler (2011) identified eight models that have been used in

91   physical education: Cooperative Learning (CL) (Dyson & Casey, 2012; Dyson, Linehan, &

92   Hastie, 2010), Sport Education (SE) (Siedentop, 1994), Teaching Games for Understanding

93   (TGfU) (Bunker & Thorpe, 1982), Direct Instruction, Personal and Social Responsibility

94   (TPSR) (Hellison, 2011), Peer Teaching, Inquiry Teaching, and the Personalized System of

95   Instruction. We advocate and apply a multi-model approach in our respective PETE

96   programs. For example, Tim regularly teaches about and through CL, TGfU, and TPSR while

97   Ashley uses CL, SE, and TGfU; however, providing a coherent analysis of the challenges of

98   implementing multiple models is beyond the scope of this paper. We will therefore use

99   Metzler's defining aspects to talk generally about models but make specific reference to CL

100 as an analytic example. We chose CL for several reasons: (a) its ability to be implemented in

101 the classroom and gymnasium, (b) despite its existence for more than 30 years there are

102 relatively few examples of the use of CL in physical education when compared with some

103 other models (Dyson & Casey, 2012), and (c) it is a model that we have both had experience

104 implementing in our programs and practice.

105   ***Foundations of a pedagogical model***. Metzler (2011) argued that each model is based

106 on learning theory, providing the philosophy and rationale for its use and offering concrete

107 examples of the most effective conditions in which it might be used. For example, CL

108 emerged in the 1920s following research into the effects of cooperation on performance and

109 drawing from studies in social relationships, group dynamics, learning, and instruction (Antil,

110 Jenkins, Wayne, & Vadasy, 1998). In the 1970s cooperation was used as a pedagogical

111 foundation for learning, focusing on two-way processes in which the outputs of each

112 participant become inputs for their peers in an exchange of ideas (Bishop & Mahajan, 2005).

113   ***Teaching and learning features***. Stemming from each model's theoretical base,

114   Metzler held that there are several features that separate each model from the others. This

115   includes a "set of managerial plans, decisions, operations, learning activities, and

116   assessments", and descriptions of the "roles and responsibilities for the teacher and students"

117   (Metzler, 2011, p. 23). For example, in CL these features include positive interdependence,

118   individual accountability, face-to-face interaction, small group skills, and group processing

119   (Dyson & Casey, 2012; Johnson & Johnson, 2009). In CL interdependence between teacher-

120   student and student-student is used to deliberately challenge traditional notions around who

121   should be in charge of classroom dialogue. Furthermore, small, structured, heterogeneous

122   groups are used to support learning in the affective, cognitive, and psychomotor domains

123   (Dyson & Casey, 2012). Other decisions around content selection, managerial control, task

124   presentation, engagement patterns, instructional interactions, pacing, and task progression are

125   also key parts of teaching and learning using models (Metzler, 2011).

126   ***Implementation needs and modifications***. Each model represents a "plan of action"

127   that, when faithfully implemented, leads to achievement of the desired learning outcomes.

128   Teachers are expected to understand the different knowledge, skills, and abilities required of

129   learners so a model's full potential can be reached. As with any pedagogical approach,

130   teachers must understand the contextual requirements in which the model will be used (i.e.

131   student characteristics, facilities, equipment, time, and learning materials) and modify their

132   implementation to fit their students' needs (Metzler, 2011). In CL, a key pedagogical

133   implication is that the role of the teacher and student(s) needs to be changed with the teacher

134   acting as facilitator. Furthermore, features such as face-to-face interaction or small group

135   skills need to be learnt and this takes time; however, it is the combination of features of the

136   model, modifications, and contextual requirements that help define the model and its learning

137   outcomes.

138   In order for MBP to appeal to prospective teachers in a meaningful way and thus be

139   placed as a feasible means for reform, it seems imperative that teacher educators provide their

140   students with a transparent look at all parts of their teaching using MBP. As such, the purpose

141   of this study is to examine our experiences as teacher educators who teach using MBP. We

142   do so in an attempt to make "concerted efforts to develop, portray, and disseminate [our]

143   pedagogical insights" using teacher education as "a springboard for action and source of

144   knowledge to support educational change" (Loughran, 2013, p. 135). Furthermore, we

145   highlight the personal and professional benefits of engaging in collaborative self-study for

146   those who work in PETE.

Method

148   Self-study of teacher education practice (SSTEP) research enables practitioners "to

149   understand practice better, share the assertions for understanding and action in practice, and

150   create more vibrant living educational theory" (Pinnegar & Hamilton, 2009, p. 5). SSTEP

151   research aims to share insights into the complexities of teaching and teacher education

152   practice from the perspectives of those who engage in that practice in order to improve both

153   personally and professionally (Samaras & Freese, 2006). A key element in SSTEP therefore

154   involves considerations of the intertwined nature of self and practice. Kelchtermans (2009)

155   suggests that in order to understand what teachers do we also need to understand who

156   teachers are. Examining self-understanding *through* practice therefore constitutes a crucial

157   aspect of teaching. It is for this reason that collaborative self-studies can be particularly

158   beneficial for teacher educators, as new understandings of self and practice are made possible

159   through discussion, debate, and analysis with critical friends (Bullough & Pinnegar, 2001). In

160   this sense, collaborative self-studies can provide teacher educators with heightened self-

161   awareness, both intellectually and emotionally. For example, Petrarca and Bullock (2013)

162   stated that their "collaborative self-study became not only a source of critical friendship, but

163   also a way for us to name, interpret, and critique our pedagogical approaches" (p. 13).

164   In undertaking our inquiry we have sought to deliberately align our work with

165   LaBoskey's (2004) five characteristics of self-study. Specifically, our design:

166   (a) was self-initiated and self-focused. Based on informal conversations we had with

167   each other about our respective teacher education practice, we identified specific and

168   salient aspects that provided us with challenging moments, dilemmas, and

169   frustrations. A common theme for both of us was the challenges we faced teaching

170   teachers about and through MBP;

171   (b) was improvement-aimed. We conducted the inquiry with the intention of

172   improving our own understanding and enactment of MBP. Further, through sharing

173   our experiences, understandings, and insights that we gained through the collaborative

174   self-study, we hoped that others could draw upon that information to improve their

175   own practice;

176   (c) was interactive in terms of its process. We used each other's experiences,

177   questions, challenges, and analyses to better understand our own. For example, upon

178   reading passages from Ashley's reflective diaries, Tim was often stimulated to apply

179   what he had read and interpreted from Ashley's experience to "map onto" his own

180   reflections, gaining new and previously unforeseen insights (and vice versa). Also, we

181   both acted as independent observers of each other's initial reflections and analyses;

182   (d) used multiple qualitative methods. As described later in the methods section, we

183   gathered and analyzed qualitative data from reflective diaries and journals, field notes,

184   and lesson plans;

185   (e) provides exemplar-based validation. That is, we rely on others in our community

186   of teachers and teacher educators to determine whether our findings are trustworthy

187   and meaningful.

188   In the following sections we describe the respective contexts in which our collaborative self-

189   study was conducted, and outline the methods we used to gather and analyze data.

190   **Context of the Study**

191   For readers to engage with our insights we have made efforts to highlight specific

192   details about the contextual features in which we taught and conducted our inquiry

193   (Kelchtermans & Hamilton, 2004). Both authors teach in university-based pre-service PETE

194   programs, having had prior experience as secondary school physical education teachers. Tim

195   taught in schools for five years and during his PhD taught physical education methods to

196   primary generalists in a pre-service teacher education program. At the time of writing he was

197   in his second year teaching pre-service physical education teachers at Memorial University of

198   Newfoundland in Canada. Ashley taught for fifteen years in schools and at the time of

199   writing was in his fifth year at the University of Bedfordshire in the United Kingdom.

200   Examining our socializing experiences as teachers who became teacher educators (Casey &

201   Fletcher, 2012) provided us with important insights about how we identified and addressed

202   the different challenges of teaching in school and pre-service contexts. Like others who have

203   studied their own transitional experiences into teacher education (e.g., Bullock, 2009), we

204   find the different pedagogical requirements of teaching teachers challenging and complex and

205   believe that our school teaching experiences alone could not have prepared us to perform the

206   role effectively. Further, we continue to be challenged by adjusting (or indeed abandoning)

207   our school-based pedagogies to suit the needs of prospective teachers, rather than of children

208   and youth. These enduring dilemmas provide a necessary impetus for us to continue to study

209   our practice in order to improve how we go about teaching teachers.

210   Drawing on the work of Hastie and Casey (in review), we feel it necessary to

211   articulate the extent to which we considered the fidelity of our teaching practices to the CL

212   model. We do this to show how our teaching practices were (or were not) congruent with

213   benchmarks described in the CL model and not simply our own versions of CL. Hastie and

214   Casey (in review) identified the following features as being salient in any description of

215   researchers' use of pedagogical models: (a) rich description of the curricular elements of the

216   unit, (b) a detailed validation of the model implementation, and (c) a detailed description of

217   the program context (including previous experiences of the teacher and students with the

218   model or with models-based practice).

219   **Unit descriptions.** The unit that provided the context for Tim's data was a double-

220   credit elementary physical education curriculum and methods course carried out during a 13-

221   week term. There were 22 students in the class, all of whom were in their third or fourth year

222   of an undergraduate degree in physical education. The first six weeks of the course involved

223   intensive campus-based coursework where students learned about physical education content

224   and pedagogies. Thematic topics addressed throughout the term included: becoming a

225   teacher, classroom community and organization, program planning, developing a vision for

226   teaching, assessment, and teaching inclusively. In each of the first six weeks, students

227   attended two 1-hour classes in a "traditional" classroom environment (that is, a lecture-type

228   class) and two 2-hour classes in the gymnasium. CL was the main approach through which

229   the thematic units were taught in the classroom and gymnasium. The second seven weeks

230   was a blend of on-campus coursework (maintaining the two 1-hour classes) and a supervised

231   field experience, where students spent three mornings a week in a primary/elementary school

232   (K-6) with a specialist physical education teacher. Students were paired with peers for their

233   placements and encouraged to collaborate, team-teach, share planning, reflect together, and

234   so on.

235   For Ashley, the unit of significance for the incidences reported in this study was

236   taught to a group of 25 undergraduate students in their second year of a four-year PETE

237   program. The track and field component of the unit ran for twelve weeks and was delivered

238   practically (that is, in a gymnasium or on playing fields) in weekly two-hour sessions. To

239   ensure model fidelity Ashley used materials that had been previously validated (see Casey,

240   Dyson, & Campbell, 2009) as (a) appropriate for the 11-14 year old students that PETE

241   students were expected to teach, and (b) prioritizing the five elements of CL.

242   **Validation of model implementation.** To consider the extent to which our teacher

243   education practice reflected the benchmarks of CL, we used Metzler's (2011)

244   recommendations both as we developed our respective units *and* after we had taught the

245   units. As such we conducted document analysis on our unit and lesson plans to understand

246   the extent to which we were being faithful to the features of CL. We analyzed each of our

247   lesson plans to consider the extent to which we applied the following essential elements:

248   positive interdependence among student; face-to-face interaction; individual accountability;

249   interpersonal and small group skills, and; group processing (Metzler, 2011).

250   Ashley has devoted considerable time and energy (both in his scholarship and

251   teaching) to understanding the extent to which his teaching faithfully aligns with the tenets of

252   the CL model, both in this study and elsewhere (*cf.* Casey, 2013; Casey, et al., 2009; Dyson

253   & Casey, 2012). Analysis of Ashley's lesson plans showed a more complete faithfulness to

254   the essential elements of CL than Tim's. As we show in the results of this study, it was Tim's

255   inexperience with using CL in schools and universities that may partially explain why the

256   version of CL that he employed might fit somewhere between what Curtner-Smith, Hastie,

257   and Kinchin (2008) described as "full" and "watered down" versions of model

258   implementation. For example, he regularly mixed small group membership rather than

259   maintaining the same groups throughout a unit or task.

260   **Program context.** An important contextual feature of this study is the extent and

261   nature of our respective school and university teaching experiences using CL. While Tim had

262   not implemented CL (or indeed any other pedagogical model) as a secondary teacher, Ashley

263   examined his use of MBP, including CL, in his teaching over a seven-year period for his

264   PhD. For Ashley, this knowledge and experience of using CL was drawn upon extensively to

265   inform his teacher education practice. This contrasted with Tim's more limited school

266   teaching experience where he did not use MBP and implemented practice that might be

267   described as traditional (for example, short units consisting of primarily team sports using

268   direct instruction). Although he had a basic awareness of pedagogical models, Tim had never

269   seen a colleague use MBP, nor did he know where to begin if he ever wanted to implement

270   this in his own program. It was not until he took courses during his PhD that he came to

271   realize the potential of MBP and began to use the TPSR and TGfU models in a pre-service

272   program. When he took on a faculty position in 2011, he was interested in learning more

273   about and teaching through CL. As a result, Tim had no practical experience of CL or any

274   other models to draw from, and he could only imagine how this approach to teaching might

275   work in either schools or universities.

276   In the units of work that provide the main source of data gathering and analysis for

277   this study, neither Tim nor his students had any experience with CL. This was a significant

278   point for Tim, providing much of the focus for the challenges he faced. Similarly, while

279   Ashley had over a decade of experience of using CL, his students had no experience with the

280   model. Therefore, while he did not face the need to learn to teach in a new way (as Tim had

281   to do), he was required to teach his students not only about track and field, but also about CL.

282   **Data Sources and Analysis**

283   We drew from three qualitative data sources, relying mostly upon open-ended

284   reflective diaries and fieldnotes. As we have outlined in previous collaborative self-studies

285   that we have conducted together (Casey and Fletcher, 2012) our views of reflective practice

286   and the purposes of reflecting draw heavily from Schön's (1983) concepts of reflecting-on-

287   action and in-action. According to Russell (2005), reflection-on-action typically involves

288   thinking back on previous events, while reflection-in-action involves thinking about how an

289   unexpected event in teaching led to a reframing of practice, and consequently, a new view or

290   perspective. Ashley's reflective diaries have been written daily since 5th September 2009 (his

291   first day in teacher education), providing a written narrative of his experiences working in the

292   university environment. His diaries have been written as personal reflections on-action with

293   the intent of aiding Ashley in better understanding how the contextual elements of high

294   school and university settings have influenced his teaching. Tim's written reflections have

295   had a slightly different focus to Ashley and are certainly logged less frequently: he has

296   compiled reflections from every PETE class he has taught since 2008. Although Tim's

297   reflections have been largely open-ended he has tended to focus on the extent to which he

298   was able to: identify instances where his teaching visions, planning, and actions have

299   connected coherently (or seemed disconnected); make explicit his tacit knowledge of

300   teaching to student teachers, and identify challenges and ways forward for future practice.

301   Our reflective diaries were supplemented by fieldnotes written during teaching or

302   planning PETE classes. Cumulatively, there were over 1500 diary entries containing more

303   than 300 000 words. Elsewhere (Casey & Fletcher, 2012), we have outlined how we used our

304   reflective diaries and fieldnotes as "literature of place" (Kelly, 2005) to situate ourselves back

305   at the time of our written experiences. Similarly, Ham and Kane (2004) refer to such data as

306   an archive "that serves as an ongoing stimulus to even more data" (p. 114). Thus, re-reading

307   our reflections (at times several years after they were written) as artifacts provided a third

308   data source, giving us new perspectives and insights into our use of pedagogical models in

309   PETE.

310   Analysis involved four steps. First, we read all components of our own data set

311   independently and using content analysis and constant comparison (Corbin & Strauss, 2008)

312   recorded instances where critical incidents, challenges, contradictions, and "aha moments" in

313   our practices were found. We used an inductive approach to analyzing the data where we let

314   our identification of concepts, themes, and ideas be guided by the extent to which our

315   research question/purpose was evident, rather than by pre-existing theories. Second, with our

316   independently coded data, we shared the instances we had identified that we individually felt

317   represented pressing challenges in teaching about and through MBP. Each example was

318   offered, and then questioned and critiqued by the other author in an attempt to tease out key

319   elements of the problem related to teaching practice. By engaging in this step we attempted to

320   act as external analysts of each other's reflections, seeking clarity by asking questions and

321   probing for deeper meaning where appropriate. We did this as a way of holding each other

322   accountable for interpreting the data to ensure some sense of trustworthiness. As teacher

323   educators in physical education we felt we were able to relate to and find individual meaning

324   from the scenarios each other has described, validating one another's analyses (LaBoskey,

325   2004). Third, once we identified examples that both of us found meaningful, insightful, or

326   that highlighted a particularly problematic aspect of practice, we collated those examples into

327   themes. We sought to identify themes that we felt would act as exemplars (LaBoskey, 2004)

328   or "ring true" for readers situated in PETE contexts. In some instances data were moved

329   based on discussion until agreement was reached. We repeated this step until we were

330   satisfied that analysis of the data had reached some level of theoretical saturation (Corbin &

331   Strauss, 2008). Finally, Ashley engaged in member checking with a colleague who was

332   external to the research. Ashley did this because a specific interaction that took place with

333   Kieran (pseudonym) provided a salient moment in the analysis that highlighted a discrepancy

334   between theoretical and practical understandings of implementing CL. In this way, Ashley

335   wanted to ensure that his interpretation of the events "meshed" with Kieran's interpretation.

336   **Results**

337   Soon after we began our roles as teacher educators, we both experienced disruptions of our

338   respective school practices and were quick to learn that what worked when teaching

339   secondary school students would not necessarily work in pre-service teacher education. Thus,

340   one of the first tensions we had to address involved the crucial element of context and its role

341   in shaping our teaching decisions and practices.

342   **In transition: Opportunities gained and lost**

343   Tim found teaching in a new context to be liberating and he eschewed many of the

344   outdated, teacher-centered approaches he had come to realize had dominated his practice. He

345   committed to adopting a fresh approach to teaching in PETE in the form of MBP. While this

346   approach might be considered research-informed, innovative and cutting edge, it should also

347   be considered new from the practitioner's perspective. For Tim this meant it was grounded in

348   theory but not yet in practice. He liked the ideas of MBP but initially could not draw from

349   experience to understand how those ideas might "look, sound, and feel" in a gymnasium with

350   pre-service teachers, let alone with school students. In contrast, Ashley's approach was old: it

351   had been developed over many years of intensive planning and research, was couched in

352   MBP, and it formed the heart of an innovative school practice that had garnered him

353   accolades and admiration. Yet – as he would quickly learn – it would have to be thought

354   about in an entirely different way when working with a different group of learners with

355   different needs.

356   A major difference between our early experiences using MBP in pre-service settings

357   was therefore based on the extent of our theoretical and practical understandings of the

358   challenges of using MBP. We both felt we were using innovative practice but it is how we

359   handled the challenges we faced in doing so that serves to differentiate our experiences. For

360   example, in adopting MBP in school settings Ashley had already taken the risks necessary to

361   have his innovative practice challenged, recognized and validated, both personally and

362   publicly. This certainly provided confidence in how he faced and overcame the challenges of

363   teaching using MBP in the pre-service program. However, for Tim, the anxiety, risk, and fear

364   of the unknown posed significant challenges to the likelihood that he would persevere with

365   MBP. Both Ashley and Tim were therefore vulnerable in using MBP in the pre-service

366   context but for different reasons: Ashley had expectations attached to his implementation of

367   MBP, and both he and his colleagues held those expectations. In contrast, Tim had few

368   expectations of his implementation of MBP; yet, fear of appearing to be incompetent to

369   students and a constant voice asking: "Am I doing this right?" were significant features of his

370   initial foray into MBP.

371   **Juggling the "hows" and "whys" of teaching**

372   Loughran (2006) explains that for pre-service teachers to develop complex

373   understandings of teaching practice it is crucial that the tacit knowledge of teaching be made

374   explicit by teacher educators in order to articulate the "why" of practice and not just to

375   demonstrate the "how". Importantly, we realized that if we intended to provide strong

376   learning experiences for our students we had to move beyond simply modeling teaching of

377   MBP by having them experience a model as learners. However, this was a challenging

378   prospect because in our school practice there was no need or expectation from students or

379   colleagues to explain the pedagogical reasoning behind our actions; we simply implemented

380   what we felt was appropriate for the outcomes we wanted our students to achieve. We also

381   understood that we could not be satisfied with having pre-service teachers "merely reading or

382   being told about the model during classroom-based lectures" (Curtner-Smith, et al., 2008, p.

383   98) and had to articulate to students *how* we were teaching using MBP while we also taught

384   *about* MBP. This involved explicitly describing how each of our teaching actions aligned, for

385   example, with CL, and explaining *why* we were doing things as we taught. This start-stop-

386   start feeling conflicted with much of what we believed reflected strong practice in schools,

387   where we relied upon a sense of flow and were conscious of transitions within and between

388   classrooms. For example, Tim wrote:

389   Coming away from today's class I am left feeling a tension between articulating

390   the reasons behind my teaching and disrupting the flow of my lessons. I tried to

391   justify this to myself by acknowledging that teaching is messy and often veers off

392   the intended path. This led me to wonder if, in order to be most effective, whether

393   articulating reasons behind teaching decisions needs to be quite tightly scripted

394   and anticipated if it is to seem as a coherent lesson.

395   Attempting to strike a balance between articulating and modeling the "hows" and

396   "whys" of teaching required significant intellectual and practical demands in terms of: (a)

397   teaching about the principles of MBP, (b) actually teaching and demonstrating how to teach

398   using MBP, and (c) unpacking reasons why we made the pedagogical decisions we did *in*

399   *situ*. The following passage from Ashley's reflective diary shows the difficulties he faced in

400   teaching about and through CL:

401   What do I want student teachers to learn about [CL]? Continuing to look at the

402   prior learning disaster[2], what can I glean from it? I had a difficult group whose

403   prior learning in [track and field] had generally been poor. I wanted to showcase

404   an alternative approach but I didn't consider that the session, as planned, was

405   asking too much of both the students and me. Furthermore, I didn't take into

406   account my prior learning about CL. I should really have known that there was

407   too much to do.

---

[2] Caused by trying to fit too much practical content into a 2-hour session.

408   In Ashley's terms, he felt that he was able to "show-case" CL by modeling the approach,

409   using small groups and asking students to learn with, by, and for one another. However, in

410   order to move beyond the "disaster" of the previous session, he realized the need to be more

411   explicit in teaching *about* the model as he taught through it, explaining the "hows" and

412   "whys" as he was teaching.

413   Alternatively, the tensions Tim faced hinged upon the nature of his own learning

414   about, and implementation of, CL which was driven by theory rather than practice. Initially

415   he felt he had a fairly strong grasp of the "whys" of CL but was less sure about the "hows".

416   While he used the opportunity for teaching renewal to reframe his practice he found more

417   problems than solutions in adjusting to a new approach. Not only was he teaching different

418   types of learners in a new setting, he was attempting to implement an innovative approach

419   without the benefits of observing experienced, skilled teachers use CL. As such, his decisions

420   and thoughts about CL (and MBP more broadly) were entirely researcher-centered –

421   assumptions about what worked, what didn't, and the reasons why were made purely from

422   his own reading. Even though he was able to draw from the theoretical guidelines of CL,

423   when it came to their implementation he was constantly questioning his actions due to doubts

424   about whether he was staying true to the model's principles. While he was initially positive

425   about his first few classes, Tim wrote: "I wish I had come across [MBP] sooner so that I

426   could see how it worked in [my secondary classes], rather than relying on written research

427   done by other teachers".

428   While Ashley had the benefit of understanding CL from both theoretical and practical

429   perspectives his teacher educator colleagues had experiences similar to Tim, with few having

430   any practical experience of CL to draw from. This meant that Ashley not only faced the

431   challenge of articulating "how and why" to pre-service teachers but also to his colleagues.

432   Many of the classes he taught involved a team approach where several faculty members were

433   responsible for teaching individual units that made up a parent course. While his colleagues

434   were responsive to his suggestions that they introduce CL into the teacher education

435   curriculum as a conceptual framework, he had not fully anticipated the disparity in his

436   colleagues' knowledge and practical understandings. For example, Kieran, a colleague of

437   Ashley's, had an opportunity to use CL for the first time and, like Tim (in another time and

438   place) set about learning the theory behind the model from a widely used text. But when it

439   came to co-planning their lessons, Kieran's reliance on the theoretical aspects of teaching

440   using CL led to a disparity in understanding between he and Ashley:

441   Part of the problem is that Kieran does the thinking first, and this is where we

442   diverge. His expertise is in [track and field] while mine is in CL yet we are

443   both trying to fit that into each other's expertise. Kieran has the first call [as unit

444   leader], however, and I am struggling to fit his model of athletics [as a sub-elite

445   athlete] into his perception of CL [as an academic].

446   As the situation transpired, the value of Ashley's experience using CL in secondary

447   teaching still held. However, it led him to realize that simply transferring knowledge of CL

448   from school practice into the university setting was not tenable. In the past, he had been

449   solely responsible for planning and teaching his own classes and was somewhat free to do so

450   in whatever way he liked, as long as the curriculum outcomes were being met. He knew the

451   "hows" and "whys" of teaching using MBP but he had never had to articulate this knowledge

452   to students or peers. Now he had to work with colleagues to ensure that, in each of the

453   individual units, pre-service teachers were not only observing a coherent set of CL practices

454   but also that they heard coherent messages *about* CL. The combination of teaching teachers

455   and teaching teacher educators about MBP was difficult; by his own admission Ashley was a

456   little intimidated by his initial university teaching experiences:

457   The second [lesson] was just ... well … flat. The students weren't great, the

458   subject was out of my comfort zone but the pedagogy was just not where I

459   wanted it to be. I guess that this is the problem with teaching someone else's

460   lessons.

461   **The highs and lows of teaching in a new context**

462   Ashley found that the contextual differences in teaching using MBP in school and

463   university were significant aspects in shaping the doubts he had about his teaching. Even

464   though the students he taught in school mostly valued their experiences of MBP (Casey,

465   2013; Casey, et al., 2009), it was clear that the pre-service teachers whom he was now

466   teaching had different learning priorities. For example, as is so often reported in teacher

467   education research, students took on a " 'hunter-gatherer' approach to accumulating teaching

468   procedures" (Loughran, 2006, p. 45) and started to complain about the lack of practical "tips

469   and tricks" that they were learning. As Ashley reflected, they wanted more "drills […] that

470   they can replicate or adopt wholesale in their teaching" or to learn "more about behavior

471   management [and] timings in a lesson".

472   These comments show a disconnection between the pedagogical aspirations of the

473   teacher educators (including Ashley) and the pre-service teachers, highlighting an enduring

474   problem at the root of the theory-practice divide in teacher education (Korthagen & Kessels,

475   1999). However, rather than being confident that MBP was a positive direction for new

476   teachers' practice and physical education as a subject, Ashley sometimes gave in to students'

477   expectations around teaching. Due to the new context in which he was working, he

478   approached his teaching more cautiously and put aside his previous innovative practices,

479   seeking instead to match the practice stereotypes he remembered from his own undergraduate

480   experience.

481   For Ashley finding solutions to this challenge proved difficult, involving negotiations

482   around the teacher educators' and pre-service teachers' respective expectations. Further, there

483   was an acknowledgement from both parties that it would take time to arrive at a mutually

484   agreed upon pedagogical direction. To echo Lundgren (1983), the difference for Ashley was

485   between the hope and the happening.

486   Some [students] hadn't read the chapter but not many. What was more

487   significant was the number who just didn't get it. It was too difficult or maybe

488   too clever, or maybe it was them who just weren't clever enough. Wait on. I'm

489   the teacher here. It's not about learning it wrong, but about teaching it right. So

490   it's my fault. Well, our fault [including other colleagues]. Confusion reigns

491   because we got it wrong. Then they [students] tried to explain, but they

492   couldn't; they didn't understand. Then I tried to explain, but to be honest I was

493   only a couple of steps ahead of them. I'd found the reading a challenge too, but

494   I was better placed to re-consider the words and compare them to a deeper

495   understanding. We moved the idea forwards, but it wasn't an easy journey as

496   we had many misunderstandings to overcome and repair.

497   In contrast, although doubt still loomed large in Tim's implementation of CL, he felt

498   somewhat more comfortable in the murkiness. This may be partially due to the expectations

499   and experiences of the pre-service elementary generalist teachers he taught when he first

500   experimented with MBP through TPSR and TGfU. This is significant because, unlike

501   prospective specialist physical education teachers, many were unsatisfied with their prior

502   learning in physical education and were keen to learn about new approaches (Fletcher, 2012).

503   So in the initial stages of his implementing MBP it was necessary for Tim to engage in a lot

504   of reading about the models and planning for his classes, he found he was learning about

505   content and pedagogy along with his students *as he was teaching*. Those students came to the

506   PETE setting with few prior assumptions about how MBP would "look" and play out. As his

507   confidence and willingness to adopt MBP grew, Tim used his own background and

508   experiences as an example to challenge pre-service teachers to think of themselves as learners

509   while teaching:

510   I think I am one of those people that Siedentop (2002) might have thought of as

511   "unskilled" when it comes to content knowledge. I am hoping to draw on

512   students' content knowledge quite a lot then and I hope that I can keep this

513   commitment. It might also be a good way to model learning from students, i.e.,

514   disrupting the "teacher as expert" point of view.

515   Despite the uncertainties Tim felt in his new approach, he found that sharing his doubts in his

516   knowledge of teaching using MBP had led him to become more intentional in the ways he

517   unpacked the "hows" and "whys" of teaching with his students. In his third year of using

518   MBP Tim found that he was being more consistent in:

519   …stopping and thinking about what and why I am doing things, and inviting

520   students to stop and think about their learning and the effectiveness of [MBP].

521   While I have felt vulnerable in stopping and inviting critique (and many times it

522   has been forthcoming), I feel that… I am thinking more deliberately about my

523   actions.

524   These examples provide evidence that is contrary to what we had expected would lead

525   to a commitment to teach using MBP in pre-service teacher education. Specifically, because

526   Ashley had extensive experience and was committed to using MBP in schools, it would have

527   been fair to assume that he would have similarly committed to adopting the practice in pre-

528   service contexts. However, the different role that Ashley now assumed and the different

529   institutional context in which he worked led him to doubt whether innovative practice carried

530   the same currency in the university as it did in schools – at least with the students whom he

531   was teaching. Further, because Tim had no experience implementing MBP in schools, it was

532   perhaps more likely that he would have abandoned MBP in the face of barriers. This is

533   because he was faced with the demands of learning about a completely new approach to

534   teaching *while* simultaneously teaching about that new type of teaching.

Discussion

536   The purposes of our paper were (a) to examine the challenges we faced in using MBP in our

537   respective programs, and (b) to highlight how collaborative self-study could be used to

538   identify and understand those challenges. Although we used the example of CL as an analytic

539   case in this study, our experiences teaching about and through other models such as TGfU or

540   Sport Education reveal similar challenges and uncertainties. We concurred with the views of

541   some in physical education that MBP is an approach through which radical reform might

542   occur (Kirk, 2013), however, we felt that a crucial element of reform was missing.

543   Specifically, for prospective teachers to learn about the problematic and complex nature of

544   innovative teaching practice (in the form of MBP), those charged with the task of teaching

545   teachers should understand the problematic and complex nature of adopting innovative

546   practice themselves. Yet, prior to our research little was known about the challenges that

547   physical education teacher educators themselves face in learning about and implementing

548   MBP in university programs: in essence, the *who* (Kelchtermans, 2009) was missing from

549   any discussions of MBP in the context of PETE. Although our findings are highly personal

550   and contextual, our collaborative self-study provides a first step toward addressing this gap.

551   We hope that sharing our vulnerabilities and personal challenges encourages others in PETE

552   to similarly share their struggles and successes in adopting innovative pedagogical practice.

553   If, as Zeichner (1999) suggests, teacher educators are uniquely placed to understand, analyze,

554   and overcome the challenges of teacher education, such sharing is imperative.

555   Despite the challenges we faced, we remained committed to adopting MBP

556   throughout our first years of university teaching. Metzler's (2011) claims that implementing

557   MBP is hard work for schoolteachers resonated with our experiences teaching in universities.

558   Despite our diverse experiences learning about and teaching using MBP, through using the

559   example of CL our research has demonstrated that it is not as easy as learning about teaching

560   practices from a book, nor is it as simple as transferring practices that were effective in

561   schools to universities. There was an extensive commitment of time, energy, and emotion in

562   trying to make MBP work. Ashley had already experienced such a commitment as he

563   adopted MBP in schools, but he had to persevere through this for a second time in adapting

564   his practice to the university context. Much like his school experiences, there were moments

565   when he questioned the value of what he was trying to do; however, reflection and inquiry

566   into the purposes and outcomes of both MBP and his own teaching values served to reinforce

567   to him that such commitments were worthwhile. In contrast, Tim had no idea what to expect

568   in terms of committing to a new approach. His commitment was required on two fronts: (a)

569   learning about the models and (b) implementing what he was learning in his practice. While

570   there were times when Tim questioned the value of committing to these new ways, like

571   Ashley, self-study provided him with evidence that such commitment was needed if change

572   were to occur in his pre-service classroom and beyond. In common for both of us were

573   regular feelings of frustration, vulnerability, and doubt; however, we also experienced

574   feelings of satisfaction in finding new pedagogical insights or by seeing "seeds planted" and

575   assumptions about teaching and learning disrupted in pre-service teachers whom we taught.

576   Our collaborative self-study also highlighted how we were coming to know our

577   respective teaching selves and practices in more nuanced and refined ways. For example,

578   Tim showed evidence that he was becoming better at articulating the tacit knowledge behind

579   the teaching decisions he was making. In this way, he felt that he was learning more about

580   teaching in a broad sense but he was also learning more about priorities for his practice.

581   Alternatively, Ashley was challenged more by the contexts in which he was teaching rather

582   than in what he was teaching. In particular, he was challenged by the expectations of pre-

583   service teachers to amass "tips and tricks" of teaching in order to "do teaching". They

584   appeared less interested in the broader justifications for a pedagogical approach and what it

585   could achieve in the long-term but were instead looking for ways to survive in schools. This

586   is not to be critical of pre-service teachers for their feelings; indeed, Ashley also found

587   himself doing what he needed to survive in the university. But through Ashley sharing the

588   difficulties in his teacher education practice with his colleagues and students, he was able to

589   articulate how MBP represented a meaningful, student-centered approach to teaching that

590   required skills far beyond the technical that were desired by most of his students.

591   These findings also highlight how beneficial engaging in a scholarship of teaching

592   (Kelchtermans, 2009) can be for teachers – regardless of their teaching context. Through

593   engaging in the study of our practice we became better able to make explicit our tacit

594   knowledge of teaching. Our analytic frame of attending to the "hows and whys" of teaching

595   using MBP proved especially useful in enabling us to understand and articulate tacit

596   knowledge to students. When teacher educators are able to make their tacit knowledge of

597   teaching practice explicit to students, more powerful influences on students' understandings

598   of the complexities of teaching are likely (Grossman & McDonald, 2008; Loughran, 2006).

599   As such, we feel that teacher educators have a responsibility to engage in the study and

600   sharing of the pedagogical challenges they face. Indeed, if innovative approaches are to gain

601   a foothold in university PETE programs and school physical education teachers' practices,

602   *communication* of the complexities, problems, and strategies used to overcome them are

603   required. Despite Zeichner's (1999) acknowledgement almost 15 years ago that self-study

604   represented one of the most significant advances in the field of teacher education, there

605 remain few examples of how physical education teacher educators have used self-study to

606 improve understandings of the complexity of teaching, or that demonstrate how PETE

607 scholars have gone about developing and articulating a pedagogy of teacher education. Our

608 study shows that the sharing that comes from engaging in discussion and debate with critical

609 friends led us to question our assumptions and practices about MBP. In turn, we are more

610 deliberate in our actions of using MBP in pre-service teacher education but are, at the same

611 time, open to the uncertainties that arise from trying to understand teacher education practice.

612   Such have been the findings of MBP in schools that Casey (2014) suggested that the

613 time to ask if these approaches work has passed; we must now seek to better understand how

614 they can work in the long-term. To do this teacher educators need to challenge not only

615 students' expectations around what it means to teach but also their own pedagogies of

616 teacher education. We need to better understand both what MBP is and how those of us

617 charged with teacher education can teach teachers – theoretically and practically – to become

618 skillful proponents of robust and innovative approaches to teaching. Through self-study we

619 were able to articulate the "hows and whys" of teaching, which certainly aided in our own

620 understanding of teaching using MBP. We call upon other teacher educators involved in

621 PETE to not only articulate their knowledge and understanding of PETE practice but to share

622 how they developed that knowledge.

623

627

628   References

629   Antil, L. R., Jenkins, J. R., Wayne, S. K., & Vadasy, P. F. (1998). Cooperative learning:

630   Prevalence, conceptualizations, and the relation between research and practice.

631   *American Educational Research Journal, 35*, 419-454.

632   Armour, K.M. (2011). *Sport Pedagogy: An introduction for teaching and coaching.* London,

633   UK: Pearson.

634   Bailey, R., Armour, K., Kirk, D., Jess, M., Pickup, I., & Sandford, R. (2009). The educational

635   benefits claimed for physical education and youth sport: An academic review.

636   *Research Papers in Education, 24*, 1-27.

637   Berry, A. (2007). *Tensions in teaching about teaching: Understanding practice as a teacher*

638   *educator.* Dordrecht, The Netherlands: Springer.

639   Bishop, J. W., & Mahajan, A. (2005). The use of teams in organizations: When a good idea

640   isn't and when a good idea goes bad. *LabMedicine, 36*, 281-285

641   Bullock, S. M. (2009). Learning to think like a teacher educator: Making the substantive and

642   syntactic structures of teaching explicit through self-study. *Teachers and Teaching:*

643   *Theory and Practice, 15*, 291-304.

644   Bullock, S. M., & Ritter, J. K. (2011). Exploring the transition into academia through

645   collaborative self-study. *Studying Teacher Education, 7,* 171-181.

646   Bullough, R. V. Jr., & Pinnegar, S. (2001). Guidelines for quality in autobiographical forms

647   of self-study research. *Educational Researcher*, *30*(3), 13-21.

648   Bunker, D., & Thorpe, R. (1982). A model for the teaching of games in secondary schools.

649   *Bulletin of Physical Education, 18*(1): 5-8.

650   Casey, A. (2014). Models-based practice: Great white hope or white elephant? *Physical*

651   *Education and Sport Pedagogy, 19*(1): 18-34.

652   Casey, A. (2013). "Seeing the trees not just the wood": Steps and not just journeys in teacher

653   action research. *Educational Action Research*, *21*, 147-163.

654   Casey, A., Dyson, B., & Campbell, A. (2009). Action research in physical education:

655   Focusing beyond myself through cooperative learning. *Educational Action Research*,

656   *17*, 407-423.

657   Casey, A. & Fletcher, T. (2012). Trading places: From physical education teachers to teacher

658   educators. *Journal of Teaching in Physical Education, 31,* 362-380.

659   Corbin, J. M., & Strauss, A. L. (2008). *Basics of qualitative research: Techniques and*

660   *procedures for developing grounded theory* (3rd ed.). Los Angeles, CA: Sage.

661   Curtner-Smith, M. D., Hastie, P. A., & Kinchin, G. D. (2008). Influence of occupational

662   socialization on beginning teachers' interpretation and delivery of sport education.

663   *Sport, Education and Society, 13*, 97-117.

664   Dyson, B., & Casey, A. (Eds.). (2012). *Cooperative learning in physical education: A*

665   *research-based approach.* London, UK: Routledge.

666   Dyson, B. P., Linehan, N. R., & Hastie, P. A. (2010). The ecology of cooperative learning in

667   elementary physical education classes. *Journal of Teaching in Physical Education*,

668   *29*, 113–130.

669   Fletcher, T. (2012). Experiences and identities: Pre-service elementary classroom teachers

670   being and becoming teachers of physical education. *European Physical Education*

671   *Review, 18,* 380-395.

672   Grossman, P., & McDonald, M. (2008). Back to the future: Directions for research in

673   teaching and teacher education. *American Educational Research Journal, 45*, 184-

674   205.

675   Gurvitch, R., & Tjeerdsma Blankenship, B. (2008). Chapter 6: Implementation of model-

676   based Instruction—The induction years. *Journal of Teaching in Physical Education,*

677   *27*, 529-548.

678   Gurvitch, R., Tjeerdsma Blankenship, B., Metzler, M. W., & Lund, J. L. (2008). Chapter 3:

679   Student teachers' implementation of model-based instruction: Facilitators and

680   inhibitors. *Journal of Teaching in Physical Education, 27*, 466-486.

681   Gurvitch, R., Lund, J. L., & Metzler, M. W. (2008). Chapter 1: Researching the adoption of

682   model-based instruction—Context and chapter summaries. *Journal of Teaching in*

683   *Physical Education, 27*, 449-456.

684   Haerens, L., Kirk, D., Cardon, G., & De Bourdeaudhuij, I. (2011): Toward the development

685   of a pedagogical model for health-based physical education. *Quest, 63*, 321-338.

686   Ham, V., & Kane, R. (2004). Finding a way through the swamp: A case for self-study as

687   research. In J. J. Loughran, M. L. Hamilton, V. K. LaBoskey, & T. Russell (Eds.).

688   *International handbook of self-study of teaching and teacher education practices.* (pp.

689   103-150). Dordrecht, The Netherlands: Springer.

690   Hastie, P. A. (Ed.) (2012). *Sport education: International perspectives.* Abingdon, UK:

691   Routledge.

692   Hastie, P. A., & Casey, A. (in review). Fidelity in models-based research in sport pedagogy:

693   A guide for future investigations. *Journal of Teaching in Physical Education*

694   Harvey, S., & Jarrett, K. (2013). A review of the game-centred approaches to teaching and

695   coaching literature since 2006. *Physical Education and Sport Pedagogy.* iFirst:

696   DOI:10.1080/17408989.2012.754005

697   Hellison, D. (2003). *Teaching responsibility through physical activity* (2nd ed.). Champaign,

698   IL: Human Kinetics.

699   Jewett, A., Bain, L., & Ennis, C. D. (1995). *The curriculum process in physical education*

700   (2nd ed.). Madison, WI: Brown and Benchmark.

701   Johnson, D. W., & Johnson, F. P. (2009). *Joining together: Group theory and group skills.*

702   Upper Saddle River, NJ: Pearson.

703   Kelchtermans, G. (2009). Who I am in how I teach is the message: Self-understanding,

704   vulnerability and reflection. *Teachers and Teaching: Theory and Practice, 15*, 257-

705   272.

706   Kelchtermans, G., & Hamilton, M. L. (2004). The dialectics of passion and theory: Exploring

707   the relation between self-study and emotion. In J. J. Loughran, M. L. Hamilton, V. K.

708   LaBoskey, & T. Russell (Eds.). *International handbook of self-study of teaching and*

709   *teacher education practices.* (pp. 785-810). Dordrecht, The Netherlands: Springer.

710   Kelly, T. (2005). Truth and fiction: seeing our rural selves. In. C. Mitchell, S. Weber, & K.

711   O'Reilly-Scanlon (Eds.), *Just who do we think we are?: Methodologies for*

712   *autobiography and self-study in teaching* (pp. 111-120). London, UK: Routledge

713   Falmer

714   Kirk, D. (2010). *Physical education futures.* London, UK: Routledge.

715   Kirk, D. (2013). Educational value and models-based practice in physical education.

716   *Educational Philosophy and Theory*. iFirst: DOI:10.1080/00131857.2013.785352.

717   Kitchen, J., Ciuffetelli Parker, D., & Gallagher, T. (2008). Authentic conversation as faculty

718   development: Establishing a self-study group in a faculty of education. *Studying*

719   *Teacher Education, 4,* 157-171.

720   Korthagen, F. A. J., & Kessels, J. P. A. M. (1999). Linking theory and practice: Changing the

721   pedagogy of teacher education. *Educational Researcher, 28*(4), 4-17.

722   LaBoskey, V. K. (2004). The methodology of self-study and its theoretical underpinnings. In

723   J. J. Loughran, M. L. Hamilton, V. K. LaBoskey, & T. Russell (Eds.), *International*

724   *handbook of self-study of teaching and teacher education practices* (pp. 817-869).

725   Dordrecht, The Netherlands: Springer.

726   Lawson, H. A. (2009). Paradigms, exemplars and social change. *Sport, Education and*

727   *Society, 14*, 97-119.

728   Loughran, J. J. (2006). *Developing a pedagogy of teacher education.* London, UK:

729   Routledge.

730   Loughran, J. J. (2007). Enacting a pedagogy of teacher education. In T. Russell, & J. J.

731   Loughran (Eds.). *Enacting a pedagogy of teacher education.* (pp. 1-16). London, UK:

732   Routledge.

733   Loughran, J. J. (2013). Pedagogy: Making sense of the complex relationship between

734   teaching and learning. *Curriculum Inquiry, 43*, 118-141.

735   Lund, J. L., Gurvitch, R., & Metzler, M. W. (2008). Chapter 7: Influences on cooperating

736   teachers' adoption of model-based instruction. *Journal of Teaching in Physical*

737   *Education, 27*, 549-570.

738   Lund, J. L., & Veal, M. L. (2008). Chapter 4: Measuring pupil learning—How do student

739   teachers assess within instructional models? *Journal of Teaching in Physical*

740   *Education, 27*, 487-511.

741   Lundgren, U. P. (1983). *Curriculum theory, between hope and happening: Text and context*

742   *in curriculum.* Geelong, AU: Deakin University Press.

743   Metzler, M. W. (2011). *Instructional models for physical education* (3rd ed.). Scottsdale, AZ:

744   Holcomb Hathaway Publishers.

745   Metzler, M. W., Lund, J. L., & Gurvitch, R. (2008). Chapter 2: Adoption of instructional

746   innovation across teachers' career stages. *Journal of Teaching in Physical Education,*

747   *27*, 457-465.

748	Metzler, M. W., & McCullick, B. A. (2008). Chapter 5: Introducing innovation to those who

749		matter most—The P-12 pupils' perceptions of model-based instruction. *Journal of*

750		*Teaching in Physical Education, 27*, 512-528.

751	Penney, D., & Chandler, T. (2000). Physical education: What future(s)? *Sport, Education and*

752		*Society, 5*, 71-87.

753	Petrarca, D., & Bullock, S. M. (2013). Tensions between theory and practice: Interrogating

754		our pedagogy through collaborative self-study. *Professional Development in*

755		*Education.* iFirst: DOI: 10.1080/19415257.2013.801876.

756	Pinnegar, S., & Hamilton, M. L. (2009). *Self-study of practice as a genre of qualitative*

757		*research*. Dordrecht, The Netherlands: Springer.

758	Punch, K. F. (2009). *Introduction to research methods in education.* Thousand Oaks, CA:

759		Sage.

760	Russell, T. (2005). Can reflective practice be taught? *Reflective Practice, 6*, 199-204.

761	Samaras, A. P., & Freese, A. R. (2006). *Self-study of teaching practices primer.* New York,

762		NY: Peter Lang.

763	Schön, D. A. (1983). *The reflective practitioner*. New York, NY: Basic Books.

764	Siedentop, D. (1994). *Sport education: Quality PE through positive sport experiences.*

765		Champaign, IL: Human Kinetics.

766	Siedentop, D. (2002). Content knowledge for physical education. *Journal of Teaching in*

767		*Physical Education, 21*, 368-377.

768	Tinning, R. (2009). *Pedagogy and human movement.* London, UK: Routledge.

769	Zeichner, K. M. (1999). The new scholarship in teacher education. *Educational Researcher,*

770		*28*(9), 4-15.