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Innovation with change: developing a community of practice to help teachers move beyond the 'honeymoon' of pedagogical renovation

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1 **Innovation with change: developing a community of practice to help teachers move**
2 **beyond the ‘honeymoon’ of pedagogical renovation**

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24 **Innovation with change: developing communities of practice to help teachers move**
25 **beyond the ‘honeymoon’ of pedagogical renovation**

26 Structured Abstract

27

28 *Background:* Physical education has long been caught in a time of ‘innovation without
29 change’. Yet, despite a wealth of pedagogical innovations and policies, which encourage
30 a reconsideration of the ‘traditional pedagogy’, teachers rarely move beyond the
31 honeymoon period of implementation.

32

33 *Purpose:* The purpose of this paper is to explore how communities of practice emerge,
34 develop and support innovation that results in pedagogical change.

35

36 *Participants and Setting:* Six secondary school teachers from a comprehensive secondary
37 school in the UK used the Cooperative Learning model, which was identified as the
38 pedagogical innovation, to teach physical education for a minimum of four units of
39 activity (6-8 lessons each). Teachers were supported by a researcher who acted as a
40 boundary spanner.

41

42 *Research Design:* To support their understanding and use of Cooperative Learning the
43 teachers’ engaged with action research through a) the analysis of their observations and
44 reflections, b) dialogue with the boundary spanner and colleagues, and c) negotiation
45 with their students. Multiple sources of data informed the study including: teacher
46 reflections, a field journal, a Verification Tool, interviews, teacher observations,
47 professional learning meetings, and discussions on social media.

48

49 *Data Analysis:* Data were analysed through constant comparison, inductive analysis and
50 peer examination.

51

52 *Findings:* The boundary spanner was a catalyst for the adoption and sustained use of
53 pedagogical innovation, facilitating teachers’ use of action research, driving social
54 energy, and the subsequent emergence of a community of practice.

55

56 *Conclusion:* If physical education is to move beyond the traditional pedagogies, then
57 communities of practice are a professional learning strategy that can support pedagogical
58 innovation with change, especially when boundary spanners help to get them started.

59 *Keywords:* Action Research, Communities of Practice, Pedagogical change, Innovation,
60 Cooperative Learning.

61

62

63 **Introduction**

64 Great ambition, the desire of real superiority, of leading and directing, seems to
65 be altogether peculiar to man, and speech is the great instrument of ambition
66 (Smith, 1759)

67
68 In his treatise on ethics the philosopher and economist Adam Smith suggested
69 that the ‘podium’ seemed to be a natural place for those who wished to lead and direct.
70 Taking this observation forwards it has been argued that education is not the exception,
71 in favouring the podium as the natural position for the teacher, but the rule (Dewey,
72 1929). Nothing seems more telling in this argument than the origins of the word ‘lecture’.
73 Drawn from the Latin *Lect* (*read, chosen*), the word represents the medieval academic
74 tradition of reading from original sources and notes, and has come to represent a notion
75 of schooling centred on the one-way conveyance of information from expert to novice.
76 The term has also come to mean “a long serious speech, especially one given as a
77 scolding or reprimand” (Oxford English Dictionary). The irony of this dual definition is
78 such that ‘lecture-style’ delivery has been heavily criticised by exponents of critical
79 pedagogy and yet the ‘lecture’ has remained the mainstay of educational practice for
80 hundreds of years.

81 In physical education the dominant practice of lecturing from the front of the
82 class has not been significantly altered since the days of the drill sergeant in the late 19th
83 Century (Kirk, 2010; Tinning, 2010, 2012). Indeed, such a militaristic, teacher-led ‘do-
84 as-I-do’ (Casey, 2010) approach has, for more than a century, been the key means
85 through which schools and teachers have managed, organised, manipulated and
86 ‘schooled children’s bodies’ to produce members of an orderly society (Kirk, 1999).
87 Such an approach to teaching holds little relevance to young people in the 21st century
88 and perhaps should be regarded as an obsolete means for learners to explore the socio-
89 cultural significance of human movement (Tinning, 2010, 2012). Drawing upon the lack

90 of dichotomy between past and current practice, Kirk (2010, 2012) recently cautioned
91 that unless a pedagogical change can firstly pervade and secondly survive in teachers'
92 classroom practices, then physical education may no longer hold a legitimized place in
93 education and could become extinct. It is against this background that this investigation
94 is set. At this juncture it is worth noting that this paper is nested within a longitudinal
95 study exploring pedagogical change, and addresses one research question from the
96 overarching project i.e. how do teachers' learn to use a pedagogical innovation within
97 and beyond their initial experiences?

98 In his discussions about pedagogy, Evans (1985) suggested that we live in a time
99 of "innovation without change" – a point that we reiterate now. Whilst a number of
100 alternatives have been proposed to help practitioners use alternatives to the 'traditional
101 pedagogy' (from Mosston's spectrum, and Maulden and Redfern's reconsideration of
102 games teaching in the 60s, through Sport Education and Teaching Games for
103 Understanding in the 80s, and curriculum, instructional, and pedagogical models in the
104 early part of this century and beyond), coupled with the introduction of policies which
105 sought to promote innovative practice and high quality teaching and learning (Flintoff,
106 Cooke and Squires, 2006; Kirk, 2010, 2012), the teacher-led approach has remained
107 'THE way to teach' physical education (Tinning, 2010, 42). Casey (2012a) held that
108 although teachers demonstrate a willingness to use pedagogical alternatives they rarely
109 move beyond the initial point of implementation (or honeymoon period). In this regard,
110 pedagogical innovations, policies and strategies have failed to unsettle the do-as-I-do
111 approach (Kirk, 2010, 2012; Tinning, 2010, 2012).

112 Despite this period of innovation without change, shifting the expectations around
113 teaching and learning in physical education is not easy, for change lies not only in the
114 desire of the teacher to change but also in the extraneous expectations about the subject,

115 especially what it does and how it does it (Bechtel and O’Sullivan, 2006; Casey, 2012b;
116 McCaughtry, 2006). Flintoff et al. (2006, 5) argued that no curriculum reform would be
117 significantly useful in promoting better practice without mechanisms “to help teachers
118 critique the nature and relevance of their practice to today’s students”. Indeed a number
119 of authors claim that teacher change is evidence-bound, where a shift in teachers’ beliefs
120 and practice is often dependent on teachers’ understanding of their students’ responses to
121 their pedagogy (Armour and Yelling, 2007; Deglau and O’Sullivan, 2006; Patton and
122 Griffin, 2008). Thereby, it seems reasonable to suggest that in order to create innovation
123 with change a reconceptualization of teacher professional learning is required (Armour,
124 2010; Armour and Yelling, 2007; Casey, 2012a; Kirk, 2010).

125 **Professional Learning**

126 In physical education a number of curriculum theorists have called for teachers to work
127 together in communities of practice (CoP) with university/teacher collaboration to aid
128 pedagogical change (Armour and Yelling, 2007; Casey, 2012a; Deglau and O’Sullivan,
129 2006; Harvey and Jarrett, 2013; O’Sullivan, 2007; Patton et al. 2005; Parker et al. 2010).
130 Quite often in a CoP, teachers work together to inquire into their respective practices and
131 to develop their understanding of how to use a new pedagogical approach (Atencio, Jess
132 and Dewar, 2012; Calderón, 1999; McLaughlin and Zarrow, 2001). A CoP creates
133 ‘space’ for meaningful, worthwhile and frequent discussions between teachers, which in
134 turn facilitate the development of their own and others’ pedagogy (Calderón, 1999;
135 Deglau and O’Sullivan, 2006; Parker et al. 2010; O’Sullivan, 2007). Parker et al. (2010)
136 suggested that this method of professional learning broke down feelings of isolation,
137 which empowered teachers to discuss their own practice and support their colleagues’
138 learning. Importantly, through participation in a community teachers have developed a
139 deeper understanding of their practice and in some cases the use of a pedagogical

140 innovation has been sustained (Calderón, 1999; Deglau and O’Sullivan, 2006;
141 O’Donovan, MacPhail and Kirk, 2010, 2012).

142 Despite the reported effectiveness of CoP, they are under-developed in physical
143 education (Harvey and Jarrett, 2013; O’Sullivan, 2007). Whilst there is encouragement
144 for the use of CoP there is a paucity of research that explores how they develop and their
145 ability to support pedagogical innovation with change (O’Sullivan, 2007; Parker et al.
146 2010). In this paper we suggest pedagogical innovation with change is possible when
147 teachers are supported in their inquiries and encouraged to engage in dialogue with other
148 teachers within, and beyond, the honeymoon period of innovation. Therefore, the purpose
149 of this paper is to explore how a CoP began to emerge and how its emergence
150 subsequently supported pedagogical innovation that results in change.

151 *Communities of Practice*

152 The idea of a CoP is attributed to the seminal work of Lave and Wenger (1991)
153 and their theoretical perspective of situated learning (Hoadley, 2012). A CoP could be
154 summarised as a group of people who “deepen their knowledge and expertise in [an] area
155 by interacting with one another on an on-going basis” (Wenger, et al. 2002, 4). The
156 assumption is that “learning is an integral and inseparable aspect of social practice”
157 (Lave and Wenger, 1991, 31) where a person is not seen as an individual but part of a
158 cultural and community context (Fleer, 2003; Lave and Wenger, 1991; Wenger, 1998a).
159 Wenger (1988a) suggests a CoP is a group of people who hold three dimensions: mutual
160 engagement, a joint enterprise and a shared repertoire. In this way, CoPs exist because
161 each participant occupies a unique identity where their contributions are important for
162 other members (mutual engagement). Members facilitate the development of each other’s
163 practice, and the practice of the community, in order to achieve a common and negotiated

164 goal (joint enterprise). Over time the community develops routines, actions, or ways of
165 doing things that become a sustainable part of their practice (shared repertoire).

166 Communities can take many forms, such as knowledge-building communities,
167 learner communities or teacher communities (Barab and Duffy, 2012). Building on the
168 work of Lave and Wenger (1991) and Wenger (1998a), Hoadley (2012) suggested that a
169 CoP has distinct features which contrast against these other notions of communities.
170 Firstly, a CoP has a degree of informality (Hoadley, 2012). By this means, a CoP is not
171 simply an organization or a group of people who work for an organization (Hoadley,
172 2012). Instead, a CoP has a low level of institutionalization where it sets its own
173 agenda(s) and establishes its own leadership. A CoP can exist within an organizational
174 structure, such as a school, and in doing so it can strengthen the outcomes or goals of the
175 organisation (Hoadley, 2012; Wenger, 1998b). Secondly, Hoadley (2012) held that a CoP
176 has a high level of connectivity. In other words, the community holds a tight social
177 network while offering a high degree of individual identification within the community
178 (Hoadley, 2012; Wenger, 1998b).

179 Although the notion of CoP was foregrounded by Lave and Wenger (1991), their
180 conception is based upon an anthropological perspective, examining CoP in everyday
181 society and not environments intentionally designed to support learning (Barab and
182 Duffy, 2012; Hoadley, 2012). Indeed, Hoadley (2012) suggests that there has been a shift
183 in the way of thinking about CoP from one which naturally occurs to one where a CoP
184 can be supported and fostered to situate learning in an authentic context. Whilst Wenger
185 (1998b) suggests that members may have a tacit way of knowing they are connected to
186 others, and are an insider in a collective group of individuals who can help nurture their
187 development, it has been suggested that CoPs emerge from individuals working together
188 for a particular purpose (Barab and Duffy, 2012; Fler, 2003). The difference between a

189 naturally occurring community and a community which is fostered, is that naturally
190 occurring communities do not have pre-defined learning goals (Barab and Duffy, 2012;
191 Hoadley, 2012). Yet importantly a CoP cannot be created. Instead, communities must
192 have some form of history for them to emerge from, and members must share a form of
193 history with one another (Barab and Duffy, 2012; Hoadley, 2012). In this way CoP take
194 time to develop. However, technology and social networking sites can support
195 communication and can be used to begin to connect people and allow members of an
196 emerging CoP to understand that they share commonality with each other (Hoadley,
197 2012). Moreover, having access to an expert or a facilitator who arranges time for
198 professional dialogue, supports individual and community inquiry and empowers
199 individuals to have a voice and ownership over pedagogical change can foster the
200 emergence of a CoP (Calderón, 1999; Goodnough, 2010; Hoadley, 2012; McClaughlin
201 and Zarrow, 2001; O’Sullivan, 2007; Parker et al. 2010). Thereby, it seems reasonable to
202 suggest that a CoP can emerge from within a school, if a collective group of individuals
203 have a shared purpose or learning goal (in this case the use of an innovation) and their
204 connectivity with each other are fostered.

205 **Methods**

206 **Participants and Setting**

207 A physical education department consisting of six (3 male, 3 female) qualified physical
208 education teachers of mixed experience (<1 and >15 years) from a co-educational
209 comprehensive secondary school (age 11-19) in England participated in the study. The
210 school’s students were predominantly from white middle class backgrounds, few had
211 English as an additional language and the proportion of students with special educational
212 needs or disabilities was below the UK National average.

213 The first author (Victoria), who had experience of teaching physical education

214 through Cooperative Learning and using practitioner inquiry as a teacher, acted as the
215 ‘boundary spanner’. However it is important to note that she was not a teacher at the time
216 of this study. The term boundary spanner is derived from the work on organisational
217 structures by Thompson (1962) and later Aldrich and Herker (1977). These authors
218 argued a boundary spanner distributes information, filters information and facilitates the
219 use of information in different organizations (Aldrich and Herker, 1977; Thompson,
220 1962). By this means, the boundary spanner is a representative of an organisation and
221 acts to meet their organizations goals by distributing the service or product through
222 interacting with other agents in society (Aldrich and Herker, 1977; Thompson, 1962). We
223 use the term boundary spanner to signify that Victoria was someone from a different
224 professional organisation (a university in this case) who brought in new information and
225 supported teacher inquiry.

226 **The pedagogical innovation**

227 The Cooperative Learning model (c.f. Dyson and Casey, 2012) is positioned as
228 the pedagogical innovation since, although five out of the six teachers had previous
229 experience of using other pedagogical models (but not beyond the honeymoon period),
230 none of the teachers had used Cooperative Learning prior to this study. The study began
231 with three month period of professional development, to improve the teachers’ use of
232 action research, and to develop their understanding of how to use Cooperative Learning
233 to teach physical education (Goodyear, 2013a). Following the professional development
234 programme the teachers used Cooperative Learning to teach a minimum of four different
235 units (six-eight lessons) during an academic year to a minimum of one class on their
236 timetable. The classes chosen by the teachers to participate in this study were all single
237 sex and ranged from year 7 (age 11-12) to year 10 (age 14-15).

238 The research design was practitioner inquiry through participatory action
239 research. The teachers engaged with the three key features of action research extolled by
240 Ax, Ponte and Brouwer (2008): analysis, dialogue and negotiation. *Analysis* occurred
241 through the observations of their students' learning and the reflections on their practice.
242 *Dialogue*, with each other, and Victoria, either face-to-face or through the online
243 community discussion board (Physical Education Practitioner Research Network).
244 *Negotiation* occurred with focus groups of the students they taught.

245 Victoria's role throughout the study was multi-faceted and included being a
246 critical friend, facilitator, supporter, and researcher (Goodnough, 2010). She observed the
247 first lessons and last lessons of each unit taught (by every teacher) and some additional
248 lessons when she visited the school to see other teachers. 63 lessons were observed in
249 total. She also conducted pre- and post-lesson, and unit interviews with all six teachers.
250 The interviews were semi-structured and used the Sunday Afternoon Drive Model
251 (Sutherland, 2012) which uses the fundamental questions of "what happened", "so what",
252 and "what now" (Sutherland, 2012) to inform current and future practice. On average
253 Victoria visited bi-weekly.

254 **Data Gathering**

255 As this paper is nested within a longitudinal project multiple sources of data
256 informed this study. The data gathering tools are represented and explained in table 1. It
257 is important to acknowledge that social media was an emergent, and unpredicted data
258 source. Data was gathered from 49 private message through Facebook and 76
259 conversations (defined as two tweets or more) through Twitter over the course of the
260 academic year between the teachers and Victoria. There were 125 separate conversations
261 on social media over 203 days (including weekends and holidays) that involved five of
262 the teachers. Their preferred time for contact varied but the conversations often occurred

263 when Victoria had not seen the teachers for a period of time or in response to Victoria's
264 tweets or status updates (on both Facebook and Twitter).

265 [Insert table 1 here]

266 **Data Analysis and Trustworthiness**

267 Inductive analysis and constant comparison were used to analyse the data
268 (Lincoln and Guba 1985). The process started with the analysis of the video recorded
269 lessons using the Validation Tool and the transcription of interviews and teachers'
270 reflections. Once this was complete Victoria approached the data through an inductive
271 lens. In Morse's (1994) terms she began comprehending the data by reading the texts and
272 writing analytical memos. The analytical memos allowed her to reflect, document her
273 understandings and maintain a level of reflexivity in the analytical process (Phillips and
274 Carr, 2007). Once these processes were complete descriptive codes were developed and
275 then used to identify and group interesting statements and events from all data sources.
276 For example, some of the codes included: working together, student impact and informal
277 and formal discussions. This formed the first-order of analysis, which as a result
278 produced thematic descriptions of the key features that supported teachers' use of the
279 pedagogical model, and the factors that motivated them to continue to use the model. The
280 themes identified from this process were, *support from the researcher, learning*
281 *communities* and *evidence of effectiveness* (Goodyear, Casey and Kirk, 2012).

282 The second stage of the analysis was undertaken to increase the validity of the
283 findings. In keeping with the work of Gall, Borg and Gall (1996), and Merriam (1995),
284 the peer examination strategy was used to member check and pass comment on how
285 items were coded, categories were defined and findings were developed. To achieve this
286 the second author independently reviewed the overarching content themes that had
287 emerged, in addition to analysing samples of data, to determine if they had been placed in

288 appropriate categories. When the analysis from both researchers was compared no major
289 discrepancies were found. However, whilst the first author had considered the conceptual
290 links between these themes in accordance with constant comparison and inductive
291 analysis (Lincoln and Guba, 1985), the second author identified that further consideration
292 of the relationship between them was needed. Furthermore, the second author challenged
293 the themes and their interrelation with the CoP literature. In this way we sought to ensure
294 the data had theoretical sensitivity since we had identified that without the wider
295 consideration of CoP the themes represented mundane descriptions of the data
296 (Charmanaz, 2008).

297 The third phase of analysis involved the reconceptualization of the original
298 themes to explore the relationship between them and their connection with the literature
299 on CoP. The two authors discussed the original themes and pinpointed on a timeline
300 when the original themes were most prominent within the four units taught and
301 subsequently, how these themes were then related to the dimensions of a CoP (Wenger,
302 1998a). Whilst the analysis began inductively we later transferred to a deductive
303 approach to understand how a CoP emerged and supported pedagogical innovation with
304 change. Four themes were subsequently identified: '*sustained support from the boundary*
305 *spanner*,' '*dialogue, analysis and negotiation*,' '*dialogue with each other*' and '*the*
306 *departmental approach*.'

307 **Results**

308 This section explores how a CoP began to emerge and how this emergent community
309 developed and supported pedagogical change beyond the honeymoon period. In
310 accordance with reports that creating change in schools is a timely and messy process
311 (Atencio et al. 2012; Patton and Parker, 2012), we argue that the first manifestation of
312 this CoP took the better part of six months to emerge. It was only at this point, and

313 beyond the anticipated point of this study, that the social framework was capable of
314 supporting the teachers' use of the innovation. Yet the very emergence of the CoP was
315 dependent on the boundary spanner, who supported and encouraged teacher learning. The
316 first theme, 'sustained support from the boundary spanner', is an overarching theme that
317 explores the pivotal role Victoria played throughout in fostering the emergence of a CoP
318 and pedagogical innovation with change. In the second and third themes, 'dialogue,
319 analysis and negotiation' (Ax et al. 2008) and 'dialogue with each other' we explore how
320 the boundary spanner and teachers' use of participatory action research facilitated
321 teachers understanding of their practice, afforded them the opportunity to explore the
322 commonalities that they had with one other, and how as a department their collective use
323 of an innovation was situated within their organisational boundary i.e. the school. The
324 final theme, 'the departmental approach', suggests that a CoP was emerging and through
325 mutual engagement, a shared repertoire and a joint enterprise, teachers' use of the
326 pedagogical innovation was supported.

327 **Sustained support from the boundary spanner**

328 To enhance teachers' ability to use innovations it has been acknowledged that an
329 outsider can facilitate the process of teacher change (Parker et al. 2010; Patton and
330 Griffin, 2008; Patton and Parker, 2012; Patton et al. 2005). We argue that the main
331 catalyst for change, and the emergence of the CoP, was 'the boundary spanner'.
332 Accordingly, we feel it is important to embody her role within the process of pedagogical
333 innovation with change.

334 Throughout the four, five or six units taught, Victoria facilitated teachers'
335 engagement with the model through both formal and informal conversations. In response
336 to their immediate reflections, she helped to develop the teachers' understanding, through
337 the post-lesson interviews, of their own and each other's practice, and helped them to

338 gain insights into their students' learning. The informal conversations that took place in
 339 the staff room, in the department office, or through social media, only began once
 340 teachers had engaged with an extended contemplation of their use of the model. On most
 341 occasions the teachers initiated these conversations and, in the main, they appeared
 342 simply to want someone else to talk to about their units or lessons, or to ask questions. A
 343 significant advantage of using social media in this study was that the teachers had regular
 344 support – most particularly from Victoria. These interactions often occurred when she
 345 had not visited the school or seen the teachers over a period of time.

346 Twitter and Facebook have proven an effective way for me to communicate with
 347 teachers this week... For instance, Miss Scholes and Miss Collie spoke to me on
 348 Friday night about how their lessons went. Mr Minns spoke to me on a Thursday
 349 night about how the rain was affecting his lessons and what he could do in terms
 350 of resources....Miss Keeping contacted me through Twitter on Sunday night
 351 about what she could do in the next unit. (FJ Unit 1)

352 In this 'virtual space' Victoria reassured teachers, challenged their reflections,
 353 gave them ideas, and encouraged them to use the insights they gathered from their use of
 354 action research. The following twitter discussion is an example of how this occurred.

355 @ Miss Keeping: massive ownership being seen by pupils now within my CL
 356 lessons

357 @Victoria: really interesting!!! Down to all the hard work and planning u have
 358 put in☺

359 @Miss Keeping: think it's more on the pupils understanding and now they have
 360 choice on roles and responsibilities instead of me choosing them

361 @Victoria: what's your next challenge for them

362 @Miss Keeping: not too sure at this point something I need to think over.
 363 Suggestions?

364 @Victoria: see after next week if there are any themes in your reflections before
 365 next unit - team comps may challenge socially further (Twitter Conversation
 366 26.4.12)

367 However, whilst some teachers still preferred face-to-face dialogue with Victoria
 368
 369 (such as Mr White, the most experienced teacher, who only spoke with Victoria once
 370 through Facebook) social media served as available platform if they chose to use it.
 371 Considering Victoria's facilitation further, some teachers preferred support from her

372 rather than their colleagues. For example, although towards the end of the study Miss
373 Collie began to share her resources and discuss her practice with her colleagues, she
374 preferred to talk to Victoria about her actual practice and the decisions she might make.
375 However, regardless of whether the teachers discussed ideas with each other or with
376 other teachers in their school, it was the year-long support from Victoria that they saw as
377 important. All teachers reported that the “constant dipping in and topping up of
378 Cooperative Learning skills” (Mr White YE Interview) enhanced their understanding of
379 how to use the model and gave them a form of moral support.

380 Victoria engaged with the teachers in their classes, the physical education
381 department, and their ‘virtual worlds’. As we discuss in the following themes, in these
382 contexts, she brought in new information, facilitated practitioner inquiry, initiated
383 professional dialogue between teachers, and subsequently provided a ‘scaffold’ for
384 getting this CoP started (McLaughlin and Zarrow, 2001; O’Sullivan, 2007; Tannehill,
385 2011). Moreover, through the juxtaposition of the virtual and the real worlds, she
386 developed a trusted and supportive relationship where teachers felt comfortable to
387 confide in her and seek her advice. Therefore, she played a vital role in encouraging and
388 developing teachers’ understanding that professional learning needs to be situated, but
389 also that learning does not only occur in a ‘workshop’ or professional development
390 course. The support she provided in spanning the boundary between theory and practice
391 was sustained, frequent and easily accessible, which we suggest facilitated the teachers’
392 pedagogical understanding of the impact of the model, the dialogue between one other,
393 and was the foundation of the emerging CoP. Yet this was not a simple or
394 straightforward process and the next three sub-sections of the paper will explore how
395 Victoria supported teacher learning and the emergence of the CoP.

396 **Dialogue, Analysis and Negotiation**

397 Following the professional learning programme there was a ‘buy in’ by the
398 teachers, seen through their willingness to use the innovation (McCaughtry et al. 2004,
399 p.137). Yet there is a strong indication in both the professional development literature
400 (Armour and Yelling, 2007; Deglau and O’Sullivan, 2006; Patton and Griffin, 2008), and
401 the models-based practice literature (Casey, 2012a) that teacher change is evidence-
402 bound. This was certainly the case in this study, as before teachers could ‘accept’ the
403 model as something which could be a ‘permanent fixture’ in their practice, and before
404 they reflected on and supported their colleagues’ use of the model, they needed to
405 determine whether it had impact on their students’ learning. However, the teachers did
406 not always seek evidence themselves. The gathering of evidence, which encouraged them
407 to move beyond their initial use of the model, often fell to Victoria. For example, the
408 teachers questioned whether their use of the model was more beneficial than their
409 teacher-led approach. Mr Churchward reflected, “he [indicating a student] is making
410 improvements, he [indicating another student] is not making as many improvements to
411 his technique...would it be any different if I was teaching him as like I normally would?”
412 (PL Interview, Unit 1). Victoria helped the teachers to reflect and provided interview
413 questions for them to explore their students’ learning and develop an understanding of
414 the impact of their innovative pedagogy.

415 In the first and second unit, post lesson interviews with Victoria were often where
416 teachers expressed their concerns about the impact of the model on students’ learning.
417 These interviews were an important time for Victoria to further teachers’ understanding
418 of the model and encourage them to reconsider their immediate thoughts on students’
419 learning. For example, Miss Scholes said: “it’s really hard because I wanted them to do
420 all three fitness tests... it was better than I thought it would be but not as good as if I was
421 leading it myself” (PL Interview, Unit 1). Following the description of events (“what

422 happened?" (Sutherland, 2012)), Victoria would question the teachers on their aims and
423 objectives for the lesson and try to focus their attention on what they were trying to
424 achieve ("so what?" Sutherland, 2012). In response to Victoria's questioning the teachers
425 began to better understand the impact of their changing pedagogies and could consider
426 the wider aspects of their students' learning and how this could transfer into subsequent
427 lessons ("what now?" Sutherland, 2012)). At the end of an interview, in which she
428 expressed her frustration with her students' lack of physical competence in the lesson,
429 Miss Scholes came to the conclusion that "they [the students] probably got more from it
430 because they know what they are doing now because they had to learn how to do the test
431 and in fact the second test they did I had to have little input in" (PL Interview, Unit 1). It
432 is clear from these discussions that Victoria played a primary role in facilitating teachers'
433 understanding of their students' learning and in challenging their beliefs that learning can
434 only occur in the physical domain as most likely seen in their do-as-I-do approach.
435 Instead, the teachers came to see that learning could occur in multiple domains when
436 certain pedagogical decisions were made and then enacted.

437 The student focus group interviews also helped to develop teachers'
438 understanding of their students' conceptions of learning. Victoria had provided the
439 teachers with sample questions to use in these interviews, but the teachers began to ask
440 additional questions in order to understand their practice from their students'
441 perspectives.

442 Mr White: So do you think your skills have improved?

443 Rick: I think I have improved quite a lot actually, especially in trampolining,
444 because before my seat drop wasn't very good but now I think I am actually quite
445 good at it

446 Mr White: So do you think that is a result of how you were taught in the lesson
447 i.e. teaching each other?

448 Rick: yeah (sic)...I think I have learnt that we work better in groups and that
449 working in groups is sometimes better than the teacher, because the teacher can
450 tell you what to do, but then working in groups you can have different ideas from
451 different people

452
453
454

(U1 FG Interview)

455 The confirmation from students that they were learning, and that they enjoyed this
456 way of learning, coupled with Victoria's discussions re-enforcing learning in multiple
457 domains, went some way to encouraging the teachers to move beyond their initial use of
458 the model. For example, when Victoria asked Mr White what the most positive thing
459 about the unit was, he responded:

460 Listening to the students and them saying that they enjoyed that method of
461 delivery as opposed to what they had experienced of PE in the past. Not
462 necessarily with me as such, but their experience of PE has always been teacher
463 leads the practice, teacher leads the differentiation, teacher leads the progress and
464 the next steps, whereas what they found, and what they enjoyed was that they
465 liked having that ownership and deciding where the lesson went next and they
466 liked that approach as well (U1 Interview).

467 The teachers also analysed students' learning in their Cooperative Learning
468 lessons compared with others taught through do-as-I-do. For example, Mr Churchward
469 compared his year seven (age 11-12) classes. At the end of the year he commented:

470 "The amount of progress was probably as good and if not better as when I did the
471 old school teacher led approach...if this style of learning is going to create an
472 improved progression rate in the pupils, then surely you should use this over
473 traditional methods" (YE Interview).

474
475 By talking with Victoria, negotiation with students in focus groups, and the
476 analysis of students' learning in Cooperative Learning and in their do-as-I-do approach,
477 the teachers developed an understanding that their use of the model was a 'success' in
478 terms of student responses, learning and motivation. As a result the teachers were
479 motivated to continue using the model.

480 "If it hadn't of been a success you wouldn't want to continue with it, but I have
481 had success with two groups...you try little things out and you see that the kids
482 respond quite well to it." (Miss Keeping, YE Interview).

483

484 **Dialogue with each other**

485 Whilst the teachers investigated their students' responses to the model in the first and
486 second units, they were very reluctant to discuss their teaching with other teachers in
487 their department. Although they knew that other teachers were teaching through the
488 model 'they didn't know the ins and outs' (FJ, Unit 2). In the following section we
489 discuss how the department began to share their experiences with each other during the
490 later units without encouragement from Victoria. Although we cannot be certain, and our
491 interpretations are based upon ontological assumptions of sequential events, the
492 professional learning meetings initiated by Victoria, the in-school recognition for their
493 innovative use of Cooperative Learning and a sense of competence which occurred
494 following the first unit, facilitated dialogue between the teachers where little or none had
495 occurred before.

496 Towards the end of unit one and during unit two, Victoria deliberately began to
497 facilitate discussions between teachers by posting questions to the web-based forum.
498 However, the teachers rarely contributed to the web chats and suggested that time was an
499 inhibiting factor. During the third unit, Victoria sought to encourage further dialogue
500 between teachers through 'professional learning meetings'. In contrast to the web-based
501 forum, when teachers were face-to-face in the professional learning meetings discussions
502 with one another took place. Based on Victoria's observations of each teacher's use of
503 the model she encouraged them to open up a pedagogical dialogue with their colleagues
504 as she felt that it would help them to further both their understanding of the model and
505 their use of it. For example, she asked Miss Scholes to share how she had modified her
506 use of group processing and this process was then repeated with each teacher.

507 Victoria: Miss Scholes found that when she was doing group processing

508 Miss Scholes: 'it lasted thirty seconds

509 Victoria: yeah and it was really short....[looking at Miss Scholes] do you want to
510 describe what you did?

511 Miss Scholes: I went back and I completely stopped the lesson and I think I spent
512 a good 15-20 minutes on what I expect from group processing...

513 (PL Meeting)

514 Victoria also undertook to write a piece for a professional journal with the
515 teachers on their ‘top tips for using Cooperative Learning to teach secondary school
516 physical education’ (Goodyear, 2013b), and initiated a second meeting. When voicing
517 common experiences through the ‘top tips’, the teachers learnt that their opinions of best
518 practice showed significant commonality across the group. This in turn seemed to
519 legitimized the ways that they were using the model and strengthened their belief that
520 they were doing it ‘right’.

521 Miss Scholes: depends on how good you are at doing open and closed questions,
522 so you become more of a facilitator not someone who gives the answer to them, I
523 think that can come with experience

524 Mr Minns: yeah so start your questions how, why, if or how could you improve
525 this

526 Mr Churchward: yeah or if you [also] put questions on your resource cards as a
527 separate box then you don’t even have to deliver them to the pupils. Rather than
528 you having to interject and formally question you can enhance and deepen their
529 discussions that have already begun

530 Miss Keeping: yeah that is almost the thing that I did with progressive
531 questions...

532 (PL Meeting)

533 Although the teachers did not talk to each other during their initial use of the
534 model without prompting from Victoria, they did initiate discussions with teachers from
535 other departments and senior leaders. These colleagues were not familiar with
536 Cooperative Learning, yet as part of the organisational boundary of the school, the
537 discussions with other teachers served to link the practices of the department to the wider
538 context of the school. The teachers began to share what they were doing with colleagues
539 external to the department and develop their colleagues understanding of how they might
540 use of the model. Subsequently, their use of the model was praised and they gained
541 recognition for their use of the pedagogical innovation and engagement with practitioner
542 inquiry.

543 When Mr Churchward explained the study in the school meeting, the deputy head
544 said that the PE department are involved in a great study enhancing their teaching
545 and learning and that staff should go down to the department and see what is
546 going on...Moreover, the assistant head has shown some interest, Mr Minns has
547 said that he is shocked and thinks it is excellent that he reflects on his lessons
548 using the Dictaphone whilst he is on break time duty. (FJ, Unit 2).

549 At the end of unit two and during unit three the teachers also began to report that
550 they felt more confident using the model. For example, Victoria noted at the end of the
551 second unit: “teachers are beginning to also state that the [elements] are becoming more
552 autonomous” (FJ, Unit 2). Furthermore, findings from the validation tool suggested that
553 teachers’ ability to use the model faithfully was beginning to become more consistent.

554 Thereby, through the process of analysis, negotiation and dialogue with the
555 boundary spanner (as discussed in the previous section) the teachers had begun to accept
556 the innovation as part of their own individual practice. Yet when they shared their
557 practice with each other during professional learning meetings and by communicating
558 their practice to school members they began to situate their practice within their
559 department and as a collective group of individuals using the same pedagogical
560 innovation within the school. Through this ‘telling of stories’, the teachers began to
561 construct an identity as a member of a community which in turn supported the
562 construction and development of what could be assumed as an emerging CoP (Barab and
563 Duffy, 2012). Indeed, it could be suggested that the teachers began to see themselves as
564 knowledgeable and skilful, and understand that they had shared practices and a shared
565 history with one-another (Barab and Duffy, 2012; Wenger et al. 2002). Furthermore, and
566 in keeping with Barab and Duffy (2012) and Wenger (1998a), situating their community
567 within the larger community of school gave the practices of the community members
568 meaning and purpose. Through colleague recognition, their use of an innovation as a
569 collective group of individuals was celebrated from within the institution and, it could be
570 argued, that the senior leaders saw their use of Cooperative Learning and practitioner

571 inquiry as a facilitating factor for the school to meet their goals of enhancing teaching
572 and learning. However, whilst the teachers began to share a collective practice, which
573 was the innovation, in the following section we explore how mutual engagement, a
574 shared repertoire and a joint enterprise was seen to emerge and support teachers' use of
575 the pedagogical innovation during the fourth, fifth and sixth units taught.

576 **The Departmental Approach**

577 During the fourth unit, and for some teachers who chose to teach an additional
578 fifth or sixth unit, a community-based approach to teaching through the model emerged.
579 Discussions about the use of Cooperative Learning were more frequent and occurred
580 without Victoria. In departmental meetings the model became one of the formal meeting
581 minutes, where the teachers shared their experiences, their plans for the next units, and
582 their resources. In her field notes Victoria observed informal discussions when the
583 teachers walked back from the sports fields, when they were waiting for students to get
584 changed and in the physical education office. The teachers also started to reflect in front
585 of each other, asked each other how their lessons had gone, and gave moral support or
586 suggestions for how lessons could be modified.

587 “There’s always quite an open conversation about it and sharing of experience, if
588 things didn’t work you often came back and said it didn’t work, or if someone
589 had had a really bad lesson we would come back and laugh about it” (Miss
590 Scholes YE Interview).

591 The most beneficial factor about working together was the sharing of lesson plans
592 and resources. The teachers claimed that this allowed them to continue teaching through
593 the model even when time was not available for them to plan and prepare resources.
594 Moreover, they were able to build upon each other’s experiences and develop new ideas.
595 In his exit interview Mr Minns said “we shared resources and we shared good practice...I
596 have used those that have been used in the past and vice versa...everyone has been really
597 helpful”. Comparatively, Mr White recalled:
598

599 “If I wanted to bounce ideas off of them about how did they do x how did they do
600 y, because they were doing different strategies that helped me in evaluating the
601 impact of what I was doing (YE Interview).
602

603 Whilst the institutional context can maintain the use of the teacher-centred
604 approach and indeed hinder teachers’ engagement with or use of alternative pedagogies
605 (Tinning, 2012), the supportive climate created within the department allowed teachers to
606 move beyond the school contextual factors which can inhibit innovation (Casey, 2012b;
607 Ovens, Dyson and Smith, 2012; Patton and Griffin, 2008). In addition to supporting each
608 other’s practice through the sharing of resources, and subsequently reducing the planning
609 and preparation time within the ‘busyness of schools’ (Casey, 2010), the teachers were
610 willing to address the teacher and departmental performance culture within the school. In
611 the UK, the Government and schools assess the quality of teaching and learning through
612 an OfSTED criterion (Cale and Harris, 2009). During observations teachers are graded
613 against OfSTED’s criteria: outstanding, good, satisfactory or unsatisfactory, which serves
614 as an external measure of the observer’s interpretation of good practice (Cale and Harris,
615 2009). During the fourth unit the department welcomed an internal assessment of their
616 pedagogy, whilst at the same time risking a potential critique of the effectiveness of their
617 newly adopted pedagogy when it was held up against the school’s and OfSTED’s
618 expectations (Calderón, 1999; Casey, 2012b). Victoria noted ‘all the teachers seemed to
619 be quite up for it, getting an external opinion of Cooperative Learning but to also see how
620 it matches with OfSTED criteria’ (FJ, Unit 4). It seemed the teachers needed to
621 determine whether teaching through the model could meet these extraneous expectations
622 and determine whether it had credence as an effective pedagogical approach in their
623 school. The outcome of the assessment was that when members of the senior leadership
624 team and Mr Churchward (director of physical education and also one of the six teachers)

625 observed three teachers' use of the model they graded two as outstanding and one as
626 good (with outstanding features).

627 Consequently, we suggest that through the recognition of outstanding teaching,
628 coupled with the department's longer term view of enhanced student learning and
629 engagement, the model was afforded currency in the inspection climate within the UK.
630 The model's acknowledged ability to achieve 'outstanding' in its own right lent further
631 credence to the teachers' identities as innovative practitioners. In other words, the
632 accolade of 'outstanding' served as further 'proof' for the teachers, the department and
633 the school that the model worked. Finally, in achieving 'outstanding' and 'good with
634 outstanding features' these teachers' place in this emerging CoP was strengthened. The
635 three teachers were seen to contribute to the community and validate its practices, and for
636 the department this served to legitimize the model within the context of their school.
637 Consequently, we argue that these events demonstrate to some degree the emergence of
638 mutual engagement, joint enterprise and shared repertoire (Wenger, 1998a).

639 By the end of the academic year, most teachers suggested that the department's
640 use of Cooperative Learning was a facilitating factor in their own use and development
641 of the model. They viewed the model as a longer term commitment for both their practice
642 and the department which would involve the development of a central resource in which
643 to share ideas and develop their practice. In this way, their continued use of the model
644 would be aided by working together to support each other's practice, and not through the
645 intervention of the boundary spanner – at least not to anywhere near the same degree.

646 Victoria: were there any factors that helped you to teach through Cooperative
647 Learning?

648 Mr Churchward: sharing resources, erm obviously the training we received, your
649 input of how to develop the lessons and yeah generally the support and the
650 discussions, discussing what happened in lessons, working as a team (YE
651 Interview)
652

653 Miss Scholes: Every unit now, people have gone off over the summer and we are
654 redesigning our schemes of work...and we are having a Cooperative Learning
655 box and people are giving example of what they could do and what [Cooperative
656 Learning] structures they could use and what structures had been used in the past
657 and then setting up a central resource for each of the sports through Cooperative
658 Learning (YE Interview)

659

660 **Discussion**

661 Towards the end of the 20th century Evans (1985) described physical education as
662 having a discourse of ‘innovation without change’. Three decades later, despite the
663 wealth of pedagogical alternatives to the do-as-I do approach (Casey, 2010), the
664 discourse of physical education has not changed (Kirk, 2010; Tinning, 2010, 2012).
665 Many pedagogical alternatives have remained as innovations and teachers rarely move
666 beyond the honeymoon period of implementation (Bechtel and O’Sullivan, 2006; Casey,
667 2012a). Casey (2012a) held that such was the depth of research around curriculum
668 change that as a research community we needed to look beyond the “does it work”
669 questions and look longer term. We suggest that pedagogical innovation with change is
670 possible through the sustained support from a boundary spanner who facilitates teacher
671 learning, encourages open dialogue (between members of a department, students and
672 colleagues within the school) and subsequently aids the emergence of a CoP. These three
673 levels of social interaction encouraged teachers to move beyond the honeymoon period to
674 a position where the innovation was becoming a sustainable part of their on-going and
675 future practice. Furthermore, authentic interaction and discussion supported the teachers’
676 willingness to make changes, and helped them develop the skills needed to use a
677 pedagogical innovation. All this occurred, we would argue, despite the school contextual
678 factors which have been shown to hinder innovation (Casey, 2012b; Ovens et al. 2012;
679 Patton and Griffin, 2008).

680 The underlying purpose of this paper was to explore how a CoP emerged and
681 subsequently how it supported pedagogical change. Through teacher inquiry we argue

682 that the teachers developed an understanding that the pedagogical innovation ‘worked’
683 i.e. it had more impact than their previous pedagogical approach, which in turn allowed
684 them to look ‘longer term’ and begin to conceptualize Cooperative Learning as
685 something more than a one-off. However, the impact of practice on students’ learning,
686 students’ responses to the model, recognition for the teachers’ use of a model, and
687 teachers’ feelings of competence to teach through the model need to be facilitated before
688 teachers were willing to, (a) move beyond the honeymoon period, and (b) autonomously
689 engage in professional dialogue with one other. For example, the boundary spanner
690 needed to empower the teachers to have a voice and create ‘space’, ‘time’, and a ‘format’
691 in which the ‘telling of stories’ could occur (Barab & Duffy, 2012). Subsequently, we
692 consider that where ‘space’ and ‘time’ were created, i.e. professional learning meetings,
693 the teachers began to construct an identity as a member of a community. Furthermore,
694 situating their use of the innovation within the department and the school we suggest
695 were the means for the emergence of a CoP. In this way, whilst CoP take time to emerge
696 (since members need to develop a shared history with one-another and understand how
697 their practices are connected (Barab and Duffy, 2012; Hoadley, 2012; Lave and Wenger,
698 1991; Wenger, 1998a, 1998b)) the boundary spanner, by filtering information and
699 supporting participatory action research, ‘speeded up’ the process of developing this
700 CoP. Indeed, it could be suggested that the department were not a naturally occurring
701 community, as Lave and Wenger (1991) perspective suggests, but that the boundary
702 spanner fostered the creation of a CoP within the school for the purpose of enhancing the
703 teachers’ use of Cooperative Learning.

704 We suggest that as result of the connections with one-another and an
705 understanding of their shared history, the dimensions of mutual engagement, shared
706 repertoire and joint enterprise (Wenger, 1998a) became evident in the department during

707 the fourth, fifth and sixth units. Through these three dimensions we argue that the
708 teachers were encouraged to move beyond the honeymoon period. Furthermore, since
709 Wenger's (1998a) three dimensions have been shown to develop in the final phase of the
710 study (i.e. in the fourth unit and beyond) we believe this has also allowed us to
711 tentatively explore how CoP benefit a teacher's pedagogy. We consider that one of the
712 most important beneficial aspects of teachers being a member of an emerging CoP might
713 be their ability, both as individuals and as a department, to overcome the school's
714 contextual factors that can impede teachers' use of pedagogical models, and indeed a
715 novel curricular (Casey, 2012b; Ovens et al. 2012; Patton and Griffin, 2008).

716 An advantage of developing a CoP is that there is an increased likelihood that a
717 pedagogical innovation will become a sustainable form of teachers' practice (Calderón,
718 1999; O'Donovan et al. 2010, 2012). Teachers that organise time for professional
719 discussions are more likely to continue to develop their understanding and use of a
720 pedagogical innovation even when in-service professional learning, such as provided by
721 a boundary spanner, is removed (Calderón, 1999). In contrast, without a supportive
722 environment and teachers working together the likelihood that a pedagogical innovation
723 will fall apart is greater (Calderón, 1999). In this way, we suggest that there is a greater
724 chance that the pedagogical innovation, Cooperative Learning, will become an
725 innovation with change.

726 Approaches that facilitate pedagogical change have not been evident, or indeed
727 have not been capable of encouraging teachers to move beyond the honeymoon period of
728 implementation (Casey, 2012a). This research led us to support previous calls for inter-
729 professional collaboration with researcher(s) who cross the boundary of their institutions
730 and engage in the milieu of physical education departments to facilitate change and the
731 use of pedagogical models (Casey, 2012a; O'Sullivan, 2007). Whilst we acknowledge

732 that ‘innovation with change’ through pedagogical models can happen without the
733 support of a boundary spanner (Casey, 2010), we suggest that if researchers cross the
734 boundaries of their institutions then as a profession we can increase the chances of
735 pedagogical innovation with change. Indeed, it can be anticipated from these findings
736 that, through her commitment to developing teachers’ practice and the social framework,
737 the boundary spanner helped the teachers’ sustain their use of the model well beyond the
738 honeymoon period of implementation. Thereby, if physical education is to move beyond
739 the tradition of do-as-I-do and help teachers’ pedagogies to reflect the needs of the 21st
740 century, then this study has gone some way to confirming that CoP are a professional
741 learning strategy that ‘works’ when boundary spanners get them started and help to
742 sustain them.

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Data Source (Code used in paper)	Description
1. Field journal (FJ)	Notes about informal discussions with teachers and key incidences that took place during Victoria's time in the school.
2. Post Lesson Teacher Analysis (PLTA) (Dyson, 1994)	Teachers responded to seven questions and either wrote their answers on paper or recorded them onto a voice recorder.
3. Post lesson interviews (PL Interview)	Victoria interview the teachers after every lesson observed.
4. Post Unit Interviews (PU Interviews)	Victoria interviewed the teachers on the completion of each unit.
5. Year End interviews (YE Interviews).	An exit interview was undertaken with the teachers at the end of the longitudinal study.
6. Cooperative Learning Validation Tool (CLVT) (Casey, Goodyear and Dyson, In Review)	The first and last lesson of each unit were video recorded. These recordings were then systematically observed by Victoria using the CLVT. This was used to support field notes in ascertaining teacher and student behaviours.
7. Professional Learning Meetings	One professional learning meeting was video recorded and transcribed.
8. Focus Group Interviews (FG Interviews)	Victoria and the teachers also interviewed the pupils at each of these time periods (i.e. post lesson, post unit, and end of year).
9. Lesson observations (LO)	Data were also used from lesson observations conducted by senior leaders.
10. Social Media and Web-Based Discussions	Data were collected from Facebook, Twitter and a web-based discussion board.

900 Table 1: Data gathering tools

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