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1 **‘You get some very archaic ideas of what teaching is...’: Primary school teachers’**
2 **perceptions of the barriers to physically active lessons**

3

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25

26 **Abstract**

27 Physically active lessons present a key paradigm shift in educational practice. However, little
28 is known about the barriers to implementing physically active lessons. To address this, 31
29 practising primary teachers (23=female) from nine primary schools across West Yorkshire,
30 England, were engaged in focus group interviews. Drawing on the socio-ecological model,
31 findings revealed that barriers influencing the implementation of physically active lessons are
32 multifaceted. Teacher's confidence and competence, concerns over classroom space,
33 preparation time and resources, coupled with the wider school culture that is influenced by
34 governors and parents, reinforce a didactic approach and act as barriers to physically active
35 lessons.

36

37 *Keywords: Active lessons, Movement, Education, Didactic teaching, Socio-ecological model*

38 **Introduction**

39 School-based education has been, and largely remains, predominantly sedentary. In England at
40 least, a tradition of didactic teaching exists as a result of increasing class sizes (Hall & Nuttall,
41 2000) and a culture of performativity that acts as a powerful influence on pedagogical choices
42 within primary school classrooms (O’Riordan, 2016). Didactic teaching involves the one-way
43 transfer of information (from teacher to pupil) through closed questioning and minimal
44 feedback. Given the propensity for this approach to help pupils acquire and recall subject
45 knowledge, these traditional didactic teaching methods require pupils to spend large segments
46 of classroom lessons inactive, often seated for extended periods of time (Nettleford et al. 2011).
47 At the same time, traditional school-based physical activity opportunities, such as physical
48 education or break time/recess, have tended to decrease due to an increased emphasis on
49 academic performance (Hardman 2011; Stylianou et al. 2016). This is surprising since there is
50 evidence to suggest that introducing physical activity into the school day can improve on task
51 behaviour (Maher et al. 2006; Mahar 2011), enhance cognitive function and academic
52 achievement (Daly-Smith et al. 2018; Donnelly & Lambourne, 2011; Watson et al. 2017) and
53 develop perceived competence and effort in the classroom (Vazou et al. 2012). This is in
54 addition to decreasing sedentary time (Salmon et al. 2005; Salmon, 2010) and increasing time
55 spent engaging in physical activity (Batholomew & Jowers, 2011; Martin & Murtagh, 2015),
56 which could have positive implications for primary school-aged children’s health.

57

58 There is however, a growing movement to develop and adopt classroom-based physical activity
59 in an effort to increase physical activity within the school day. According to Watson et al.
60 (2017) there are three prominent types of classroom-based physical activity frequently
61 discussed in primary schools that, while sharing a common goal to increase physical activity
62 and reduce sedentary time, differ in terms of the purpose of the movement. These include: (i)

63 activity breaks, (ii) curriculum-focussed active breaks, and (iii) physically active lessons
64 (Watson et al. 2017). With regard to the former, one common use of physical activity is as a
65 stand-alone activity that provides a ‘break’ from academic instruction within or between
66 lessons (Webster et al. 2015) (for example, Wake Up Shake Up). Curriculum-focussed active
67 breaks however, comprise short bouts of physical activity that include curriculum content
68 (Watson et al. 2017) (for example, Take 10!). On the other hand, physically active lessons are
69 those that seek to integrate movement into the existing curriculum, in key learning areas other
70 than physical education (Watson et al. 2017). Physically active lessons, therefore, present a key
71 paradigm shift in current educational practice since the movement is integrated in a meaningful
72 way with the curriculum content. This pedagogical approach offers a stark departure from
73 traditional didactic teaching, potentially adopting a more constructivist and problem based
74 learning approach whereby teachers act as facilitator for learning in a physically active manner.
75 Importantly, a recent two-year longitudinal study demonstrated that pupils who engaged in
76 physically active lessons were four months ahead in maths and spelling than their peers who
77 only engaged in traditional classroom learning (Mullender-Wijnsma et al. 2016). To date, while
78 some literature would argue that physically active lessons have not always led to enhanced
79 academic outcomes (Graham et al. 2014), no study has found a negative effect compared to
80 traditional classroom learning (Watson et al. 2017).

81

82 Despite this, classroom-based physical activity interventions are often designed by researchers
83 who understand elements of the provision but may lack the operational knowledge of the school
84 environment and the barriers to implementation that teachers may face. While short-term
85 outcomes are likely to be fuelled by initial teacher enthusiasm, longer-term success may be
86 hampered by the multifaceted barriers within the school social, physical and political
87 environment. To solve longer-term implementation challenges, it is important to gain a wider

88 understanding of the barriers to successful implementation within the school. While several
89 studies have reported on barriers to activity breaks within lessons (e.g., Gatley et al. 2013;
90 McMullen et al. 2014), to date only a few studies have sought to explore the barriers to
91 physically active lessons more specifically (McMullen et al. 2016; Martin & Murtagh, 2015).
92 In these studies, time, space, a lack of training and the pressures of standardised testing were
93 identified as the main barriers. However, in the Irish study by McMullen et al. (2016), data
94 were drawn from a small sample of 13 teachers in the same school who were already involved
95 in implementing physically active lessons. In the Irish study by Martin and Murtagh (2015),
96 findings were based on survey data from only one teacher.

97

98 Thus, for longer-term success, knowledge of the barriers within and beyond the school is
99 essential in order to best support the implementation of this innovative practice. Akin to
100 McMullen and colleagues (2016) suggestion for further research that considers the perspectives
101 of teachers, we also argue that research should include a broader sample, drawing from a more
102 diverse range of primary school staff (across a variety of different schools), who do not
103 currently implement physically active lessons. As such, this study offers a comprehensive
104 exploration of the factors that influence the successful implementation of physically active
105 lessons. More specifically, it aimed to:

106 (1) explore a wide range of primary school teachers' perceptions of physical activity
107 lessons and,

108 (2) map the barriers to a socio-ecological model, identifying the varying and interconnected
109 levels of influence.

110 Briefly, socio-ecological models offer a framework for mapping and understanding the
111 multidimensional influences that shape practice (Langille & Rodgers, 2010), in this case,
112 implementing physically active lessons. As well as accounting for intrapersonal (individual)

113 and interpersonal factors, socio-ecological models consider broader influential factors such as
114 the community, the school institution itself, and the influence of policy (McLeroy et al. 1988).
115 Socio-ecological models have been used previously in similar studies to explore preservice
116 classroom teachers perceived barriers in implementing movement integration in America
117 schools (Goh et al. 2013).

118

119 **Methodology**

120 *Participants*

121 Given the aims of the study, a qualitative approach was adopted in order to explore, in depth,
122 participants understanding of physically active lessons and their perceived barriers to
123 implementation. As such, 31 practicing teachers (23=*female*) from nine different primary
124 schools across West Yorkshire, England, were recruited for the study in 2016. These nine
125 schools were rated by Ofsted as Good or Outstanding but varied with regard to the proportion
126 of pupils with a special educational need or disability and the proportion supported by Pupil
127 Premium (see table 1). An initial school was identified through a School Sport Partnership
128 Manager before further schools were approached through a process of snowball sampling
129 (Cohen et al. 2011). Once a school was identified, key gatekeepers (Head Teachers) were
130 contacted via email and telephone. Teachers within the school were then invited to take part in
131 the study. To be included, participants had to be working in a primary school in a teaching
132 related capacity at the time of the study (e.g. either as a teaching assistant, as a full- or part-
133 time primary school teacher, or on a teacher training programme). Moreover, those recruited
134 were not engaged in delivering physically active lessons and so could speak about what might
135 prevent them from engaging with this practice. The resulting sample included those engaged
136 in teacher training, subject leaders, classroom teachers, Assistant Head Teachers and Head
137 Teachers (see table 2).

138

139 INSERT TABLE 1

140

141 *Method and procedures*

142 All participants were invited to take part in a semi-structured, focus group interview. In total
143 six focus groups were conducted. Prior to data collection, university ethical approval was
144 granted. From the outset, all participants were asked if the interviews could be recorded, to
145 allow data analysis to be carried out at a later stage and were asked to provide signed consent
146 to participate in the research. Focus group interviews, while often driven by the researcher's
147 interests, are thought to provide access to reports on a wide range of topics and are relatively
148 efficient in comparison to individual interviews in terms of gathering equivalent amounts of
149 data (Sparkes & Smith, 2014). However, they can be dominated by a few individuals and are
150 often susceptible to facilitator bias (Yin, 2016). To minimise the risk of bias, a focus group
151 interview schedule was drafted, piloted and provided to participants in advance. The
152 participants were informed that the questions were related to physically active lessons, where
153 movement was integrated with curriculum content. As such, questions covered teachers'
154 understandings, perceived benefits and barriers to physically active lessons. Pre-defined points
155 to probe were included with all questions to ensure interviewees were encouraged to elaborate
156 on their answers to maximise the depth of the data captured. Interviews then took place in
157 school classrooms or the staff room depending on the school, lasted between forty-five minutes
158 to an hour and were conducted by the lead researcher to ensure consistency of approach.

159

160 INSERT TABLE 2

161

162 *Data Analysis*

163 All focus group interviews were transcribed verbatim and thematically analysed (Braun &
164 Clarke, 2006). Following multiple independent readings of the transcribed texts by the three
165 authors, the data were coded via a process of open coding (Cohen et al., 2011). After this initial
166 point, a peer review strategy was employed whereby all three authors met to share and discuss
167 their independent analysis and emerging patterns. During this process data were moved into
168 different first-order and second-order themes with each author describing their justification for
169 the placement of the data. No strong disagreements between authors were identified. Codes
170 were, therefore, collated into potential core themes before a thematic table was generated
171 (Cohen et al., 2011) (see Table 3). The themes and patterns within the data were identified in
172 both an inductive ('bottom up') and a deductive (theoretical or 'top down') way (Braun &
173 Clarke, 2006). The former ensured that themes identified were strongly linked to the data
174 themselves without trying to fit them into a pre-existing coding frame. The latter, a deductive
175 analysis, was employed as this allowed for a more detailed analysis of some aspects of the data
176 in respect of the socio-ecological model that was used to guide thinking around potential
177 barriers to implementation (Braun & Clarke, 2006; Langille & Rodgers, 2010). For instance,
178 the initial emerging first order themes of 'perceptions of teaching and learning' and 'teacher
179 reluctance' were grouped to form the second order theme of 'teacher attitudes'. Then, by
180 applying the socio-ecological model, this second order theme was grouped with 'teacher
181 confidence and competence' to form the core theme of 'individual factors', since this was the
182 most proximal level of influence recognised in the socio-ecological model (see table 3). The
183 resultant themes were then refined, whereby negative cases that contradict emergent patterns
184 were sought to expand, adapt or restrict the original construct to help tell the overall story
185 (Cohen et al., 2011), though none were identified here. Several themes emerged around
186 definitions and the benefits of 'physically active lessons', but these data did not necessarily
187 relate to the aims of this paper and, therefore, are not presented here.

188

189 INSERT TABLE 3

190

191 With regard to the trustworthiness of the study, the process of peer review and the ensuing
192 dialogue between authors helped to determine the studies credibility and transparency.
193 Transparency was obtained through foregrounding the dialogue between the authors above,
194 and by providing a rich description of the research methodology. Moreover, we sought rigor
195 through rich descriptions and explanations of the theoretical framework (as discussed later),
196 the data sources and the wide sample the data were drawn from (Tracy, 2010).

197

198 **Findings and discussion**

199 After analysing the data, five core themes emerged relating to the factors that influence whether
200 or not teachers would implement physically active lessons in primary schools. As identified in
201 the socio-ecological model, results are reported under individual, interpersonal, institutional,
202 community, and public policy levels of influence.

203

204 *Individual level influences*

205 According to McLeroy et al. (1988), individual factors relate to personal characteristics and
206 choices and, in relation to physically active lessons, teachers' knowledge, skills and levels of
207 self-efficacy. Importantly, these factors are thought to be the most direct and influential in
208 shaping behaviour or in this case, a teacher's practice (McLeroy et al. 1988). Here, prominent
209 themes to emerge from the focus group interviews were teachers' confidence, competence and
210 their attitudes toward delivering physically active lessons. Interestingly, few teachers admitted
211 to a lack of knowledge of how to integrate activity with curriculum content, instead they
212 focused on the physical capabilities of some teachers:

213 *I think it depends on the individual staff as well and their circumstances, I mean you've*
214 *got to consider other people's health as well, you know if someone is ill, or coming*
215 *back from a major illness or operation, can they actually be as involved in these things*
216 *as you want them to be? So I think you've got to bear in mind staff's, not just their*
217 *willingness, they might be willing but they might not be capable but they could still be*
218 *supportive in a way (FG4, T4)*

219 While this reflected a perception that teachers should engage in the active component with
220 pupils, it also suggests that teachers perceive the level/intensity of activity to be quite high.
221 Many primary school staff also discussed how other teachers may lack the confidence to deliver
222 these lessons: “*Confidence in staff, not everyone, even in PE not everybody will go all out,*
223 *there are some that are reluctant because they lack confidence*” (Focus group 1, Teacher 4). In
224 the same focus group, another teacher also identified how a lack of confidence specifically acts
225 as a barrier:

226 *I think one of the things people might see as a con is the disruption, I know that teachers*
227 *lack confidence and feel more uncomfortable when children are moving around and*
228 *picking their equipment and things like that. They feel that it is unorganised if they don't*
229 *have children sitting at desks in the classroom... that could be a con [negative] for me*
230 *(Focus group 1, Teacher 1)*

231 Although the teachers here didn't report a lack of knowledge with regard to how they
232 implement physically active lessons, arguably, enhancing their knowledge through continuous
233 professional development may subsequently increase levels of confidence. Moreover, while it
234 has been suggested that the integration of physical activity into classroom lessons could pose
235 problems for teachers who lack confidence (Welch, 1998) previous studies that have looked at
236 classroom-based physical activities more broadly have identified self-efficacy as a key barrier

237 (Gibson et al. 2008; Parks et al. 2007). However, this study is the first that relates this barrier
238 to the implementation of physically active lessons specifically.

239

240 It could be argued that the perceived lack of confidence reported by teachers contributes to a
241 feeling of reluctance to engage in physically active lessons and to see past the traditional
242 perceptions of teaching and learning. Several participants suggested that some primary teachers
243 “are very stuck in their ways”, viewing teaching as very didactic, teacher lead and more often
244 than not, sedentary. This was often rationalised in relation to the need to sit and write, which
245 reflected the real world beyond school:

246 *There’ll always be a time when they need to sit down and write something (Focus group*
247 *4, Teacher 2)*

248 *...they need to be taught the skills of working independently don’t they? Because they*
249 *are not going to be active all day when they’re in the real world, they are going to be*
250 *sat at a desk sometimes (Focus group 4, Teacher 1)*

251 In the above exchange, it could be argued that the emphasis placed on working independently,
252 associated here with working in a sedentary manner, devalues other transferrable skills such as
253 teamwork and communication that might be more evident in physically active lessons. In
254 addition, while this general reluctance to see past the traditional didactic view of teaching was
255 consistently identified as a barrier to delivering more innovative, physically active lessons,
256 some teachers recognised this was also a product of the educational system itself.

257 *But it’s seen as an acceptable progression isn’t it? You know, we’ll get them out of*
258 *foundation stage, year 1 at the start of the year there’s more provision and by the end*
259 *of the year it’s more formal. Then in year 2, you’re ready to sit at a desk so that’s seen*
260 *as a positive isn’t it, right, well done, you’re ready to sit down now and do nothing...*
261 *it’s taken us a year but we’ve managed to drive out all of your self-motivation and*

262 *creativity and by year 5, if you've not got a pencil, you'll sit at your desk for ten minutes*
263 *with your hand up until someone brings you one! (Focus group 5, Teacher 1)*

264 Evidently, this teacher believed the current primary education system serves to reinforce a
265 didactic approach that limits pupil agency and impacts negatively on self-motivation and
266 creativity. This *system* may reflect the pressures of standardised testing and a performative
267 culture (O'Riordan, 2016) with sitting down patiently recognised as a sign of success whereby
268 pupils are subservient to the teachers. All in all, teacher's views of teaching and learning and
269 the reluctance of teachers to change their ways and deviate from the traditional didactic delivery
270 in relation to the introduction of physically active lessons were perceived to be key barriers
271 here. Furthermore, while individual level factors are thought to be the most significant with
272 regard to making a change in practice, these are shaped and further exacerbated by factors at
273 various other levels as outlined later.

274

275 ***Interpersonal level influences***

276 Interpersonal level factors were also identified by participants as barriers to implementing
277 physically active lessons and revolve around the interpersonal processes and the primary social
278 groups involved (McLeroy et al. 1988). While few teachers mentioned the need for help or
279 support from peers, for instance, in the need for role models to help them deliver physically
280 active lessons, the most prominent responses centred on the pupils they had in their class.
281 Overwhelmingly, teachers reported pupil behaviour as a particular barrier:

282 *We have some children who kick off at an active lesson, then that's a barrier for the*
283 *teacher, for themselves and for the class, then it's handling the behaviour rather than*
284 *the active learning (Focus group 3, Teacher 1)*

285 *I would say behaviour management there as well, I do pride myself on it but even*
286 *anything active, you've got to find the spellings or go outside, there will always be more*

287 *major behaviour issues then there will be if everyone is sitting down and I think that*
288 *will be why the majority of people that aren't that keen on active things would choose*
289 *not to do them because, instead of just chatting, a kid might run off or hurt someone or*
290 *hurt themselves, it escalates, so I think that needs to be a priority (Focus group 1,*
291 *Teacher 1)*

292 Pupil behaviour could therefore be used as an excuse to avoid implementing physically active
293 lessons. This finding is reflected in McMullen and colleagues (2014) study of activity breaks
294 whereby teachers reported student behaviour as a key issue when considering whether to use
295 an activity again or not. Moreover, ensuring the pupils remain seated helps to ensure a level of
296 control and classroom management and may act as a repressive strategy that reinforces the
297 traditional didactic view of teaching reported earlier under the individual level influences. A
298 unique finding however, was a recognition that having pupils in the class with special
299 educational needs and disabilities (SEND) may influence decisions to engage with physically
300 active lessons due to the difficulties of maintaining an inclusive environment:

301 *I know from my son's point of view, he's a wheelchair user, that when they do that sort*
302 *of thing at high school, he's left at the side, or because it takes him so much time to get*
303 *into groups of organisation, that he always ends up with the person that no one else*
304 *wants to work with. So, it's about ensuring those sorts of physical aspects don't isolate*
305 *people (Focus group 4, Teacher 4)*

306

307 ***Institutional level influences***

308 Along with the physical and social environment, institutional factors also refer to the rules,
309 regulations, practices and policies of the school (McLeroy et al. 1988). Here, the analysis
310 revealed three core sub-themes: the physical environment, available resources and the school

311 culture. With regard to the former, primary school teachers spoke about the challenges with
312 space and the classroom layout:

313 *You wouldn't be able to do it in Year 1 or Year 2, the classrooms kind of fold on to one*
314 *another in a couple of places, so that would be a bit of nightmare. I guess time as well.*
315 *(Focus group 2, Teacher 2)*

316 *I mean you could do it in your classroom but you've got all your tables, chairs and*
317 *furniture. I know in our classroom a lot of the furniture sticks out and you've got areas*
318 *so then we'd have to start lugging all the furniture around to get a big space where you*
319 *could do something. (Focus group 3, teacher 2)*

320 These challenges also had implications for the amount of time it would take to (re)arrange
321 classroom furniture, the associated safety issues with pupils moving around the classroom
322 (McMullen et al. 2016) and how sharing space with other classes was particularly problematic.
323 This is perhaps, not surprising since the literature that addresses physically active lessons and
324 classroom-based activity more broadly, most frequently cite institutional factors and the
325 physical environment more specifically as a central barrier. For instance, in the study by
326 McMullen et al. (2016) that drew on data from 13 participants in one Irish primary school,
327 space including classroom set-up and class size, was repeatedly identified across their data
328 sources. This is reflected in the broader literature too (Gately et al. 2013; McMullen et al. 2014;
329 Stylianou et al. 2016). While previous studies have identified the need to find time to
330 implement activity within the lesson (Cothran et al. 2010; McMullen et al. 2014; 2016; Naylor
331 et al. 2006; Stylianou et al. 2016) this study identified the preparation time as a central barrier
332 with regard to moving and rearranging classroom furniture.

333

334 Similar to the sharing of space, participants also recognised the availability of resources as a
335 potential barrier. For instance, teachers discussed having to share physical resources and a lack
336 of staff resources that would otherwise support physically active lessons:

337 *So if you want to use the balls for your science lesson and someone else was doing a*
338 *PE lesson, you know it's... (Focus group 4, Teacher 4)*

339 *You have to consider your staff ratio... For early years it is 1 to 13, so for a class of 30*
340 *you would have two adults in there but you would have to make sure that the other adult*
341 *didn't get taken away for anything else because you were outside doing something,*
342 *which is often an issue in schools, so your active lesson couldn't then go ahead (Focus*
343 *group 3, Teacher 1)*

344 Finally, participants discussed the role of school and governor expectations and whether they
345 could get their buy-in as another factor that would influence their ability to implement
346 physically active lessons.

347 *Yeah when you're under the pressure of 'Hang on if they don't get results and things*
348 *and they've been outside in the playground, well what have they been doing? (Focus*
349 *group 2, Teacher 1)*

350 *Even talking to a chair of governors about this a couple of months ago he said well*
351 *that's what you've got to prepare for when they work – it's that they sit at desks when*
352 *they are in the office and again that's just a mind-set... (Focus group 5, Teacher 2)*

353 These comments largely reflect the broader school culture and whether or not physically active
354 lessons align with the school development plan and whether the school governors recognised
355 the positive effect it could have. It is important to remember that teachers do not operate in a
356 vacuum and are influenced by the wider environment in which they operate. Hence, teacher's
357 beliefs, values, competence and confidence at an interpersonal level are likely to be shaped by
358 the school culture and support from senior management at the institutional level.

359

360 *Community level influences*

361 Perhaps the most prominent responses with regard to community level factors related to parents
362 and their expectations. For instance, in an exchange between the two teachers involved in the
363 second focus group, there was recognition that parents may view learning in different ways:

364 *Karl: Trying to read parents, we have more chance of predicting lottery numbers, even if you*
365 *think you are sure about something you will always get one parent who will be like*
366 *'they seem to be going outside an awful lot, I don't agree with that, they should be*
367 *inside sat at a table', so you might get one parent who...*

368 *David: You get some very archaic ideas of what teaching is...*

369 Similarly, there were teachers who recognised that some parents had expectations that their
370 child would leave primary school and attend a grammar school. Hence, anything other than
371 being seated, with information drilled into them, would negatively impact their learning and
372 chance of progressing. This ultimately acted as a barrier to changing the way they taught and
373 further reinforced the barriers identified earlier at the individual level.

374 *I also think that the type of children that we have that go off to grammar school tend to*
375 *be the more capable, and I think that their parents will perceive that those lessons*
376 *aren't doing anything to push and challenge their high-ability, high-achieving*
377 *children... (Focus group 4, Teacher 3)*

378 *I think some higher ability parents might be against it, so some of the children who are*
379 *really bright in my class, some of their parents think they should be sat down and learn*
380 *the next step then go through it, drill through learning. (Focus group 3, Teacher 3)*

381 *Well it would probably be on Facebook to begin with and slagged off [by parents].*
382 *(Focus group 3, Teacher 1)*

383 Throughout the responses, teachers discussed the need to ensure parents saw the value of
384 physically active lessons and that they were able to recognise that their child could still achieve
385 the desired learning outcomes through non-traditional means of teaching. To our knowledge,
386 no study has yet identified how influential parents may be with regard to what schools deliver
387 within lessons. Yet here, unanimous across the different focus groups were teachers who were
388 cognisant of parental expectations and how their practice may be received. Importantly, Allison
389 (2010) has argued that teacher's perceptions and personal fears (perhaps in this case of how
390 they are perceived by parents at the community level and Head Teachers and governors at the
391 institutional level) are likely to influence their choice of pedagogy and thus may result in
392 reinforcing a traditional didactic approach.

393

394 *Policy level influences*

395 The final level of the socio-ecological model centres on public policy (McLeroy et al. 1988),
396 particularly those policies that may shape practice in primary schools with regard the
397 implementation of physically active lessons. Here, the National Curriculum (which suggests
398 what should be taught in most state-run schools in England) along with Ofsted, the organisation
399 responsible for inspecting a range of educational institutions were identified as key barriers.
400 For instance, when discussing the learning outcomes of curriculum content, several teachers
401 thought it would be difficult to integrate movement:

402 *Some things just don't fit. Sometimes you just need to be sat in front of a laptop, you've*
403 *got to be researching or you've got to have a text in front of you or reading examples.*

404 *Comprehension style activities. (Focus group 2, Teacher 1)*

405 Similar to the study by Gately et al. (2013) that evaluated an activity break within lessons,
406 Ofsted was cited here as a particular factor that would shape decisions to implement physically

407 active lessons. For instance, there were several discussions that centred around Ofsted and what
408 teachers thought inspectors would want to see.

409 *...if you think about the big O word, you know if we are prepared to rip the curriculum*
410 *up or become much more active then we've got to know, are we actually at a stage*
411 *where we can do that knowing that potentially Ofsted come next year or the year after?*
412 *We've only just come out of 'requires improvement', so are we going to be putting*
413 *ourselves at risk... (Focus group 4, Teacher 4)*

414 In keeping with the interconnected nature of the various factors across multiple levels of
415 influence, arguably, the focus on Ofsted also made teachers reflect on how they provide
416 evidence of progress and assessment in physically active lessons.

417 *There is a fear there... from an Ofsted point of view, you could get inspectors, you know*
418 *the school where my children go they are very much about evidence in books because*
419 *that's what they've been told they have to do... that's not going to encourage teachers*
420 *to engage in active lessons (Focus group 5, Teacher 1)*

421 *That was the Head Teachers' comment when we brought this to her this morning, was*
422 *what about assessment for learning? How will you know that they have achieved it*
423 *because the evidence is not there and you may be a facilitator of the activities rather*
424 *than in a position where you can assess what they have done? (Focus group 1, Teacher*
425 *5)*

426 *It's just how would you show that rigour that challenge in an active lesson? How would*
427 *you prove to parents that actually you are challenging their child? (Focus group 4,*
428 *Teacher 4)*

429 It has been suggested that the Curriculum generates specific mechanisms to assess pupils and
430 promotes didactic skills-based teaching (Allison, 2010). Here, there was also an explicit
431 concern about preparing pupils for SATs, which reinforced a specific way of teaching. Hence,

432 the challenges of monitoring and providing evidence in physically active lessons was identified
433 as a key barrier. These findings are reflective of the wider literature where the pressures of
434 assessment combined with an already packed curriculum have been identified to act as a barrier
435 to classroom-based physical activity more broadly (Bartholomew & Jowers, 2011; Cothran et
436 al. 2010; Gately et al. 2013; Gibson et al. 2008; Naylor et al. 2006) and in physically active
437 lessons more specifically (McMullen et al. 2016). However, while many of these studies
438 discussed assessment pressures in terms of time, here assessment pressures were identified with
439 regard to the challenges of monitoring and evaluating progress for external inspections within
440 a physically active lesson.

441

442 **Conclusion**

443 This study provides a comprehensive exploration of the barriers to implementing physically
444 active lessons from the perspectives of primary school teachers who do not currently
445 incorporate physically active lessons into the school day. It has drawn on a wider and more
446 varied demographic sample to present a detailed analysis of the barriers that impact on a
447 teacher's ability and willingness to implement physically active lessons. Consequently, this
448 paper differs from previous studies that have sought the views of teachers who have experience
449 of implementing physically active lessons (Martin & Murtagh 2015; McMullen et al. 2016) or
450 those that have explored teachers' perceptions of activity breaks (Gately et al. 2013; McMullen
451 et al. 2014; Stylianou et al. 2016).

452

453 School-based interventions, such as physically active lessons, are often short lived. One
454 explanation is that they do not take into account the multi-level factors that prevent teachers
455 engaging with the intervention. This paper offers an important contribution to the existing
456 literature since, primarily, it demonstrates that the barriers influencing the implementation of

457 physically active lessons are multifaceted. Teachers, schools, communities and public policies
458 all have a role to play and given the interconnecting nature of these influences, are likely to
459 shape teachers practice in numerous ways. Importantly, unlike previous studies, this study
460 identified parents, as key stakeholders at the community level, as particularly influential in
461 shaping decisions to implement physically active lessons. Therefore, consideration needs to be
462 given to individual, interpersonal, institutional and community factors that constitute the
463 different levels of the socio-ecological model. Furthermore, if the integration of physically
464 active lessons into the primary school day is to be successful, the adoption of a framework such
465 as the socio-ecological model, with all that this represents, is essential.

466

467 *Practical implementations*

468 Our study reveals that for physically active learning interventions to achieve long-term
469 adherence, a multifaceted intervention, engaging all levels of the socio-ecological framework,
470 needs to be implemented. This is essential in order to challenge the various interconnected
471 factors that currently reinforce the traditional didactic teaching methods and prevent teachers
472 from adopting alternative pedagogical approaches that integrate movement into curriculum
473 content in physically active lessons. Based on the findings, the following recommendations are
474 therefore suggested for the future design and implementation of physically active lesson
475 interventions:

- 476 • To ensure the buy in of key stakeholders (Ofsted, governors, parents, head teachers,
477 teachers and pupils), who may question the role of physically active lessons,
478 programme designers should include information sessions and material that promotes
479 the role physical activity can play in enhancing academic achievement.
- 480 • Given the need to evidence pupil progress, programmes should be designed to enable
481 recording of work for assessment. For example, this may involve the use of technology

482 to record learning during the physically active lesson and/or blocks of time where work
483 is recorded within books.

484 • Given the space limitations in a typical classroom, education outside of the classroom
485 may provide another solution to enhancing physical activity. This may take the form of
486 activities such as forest school or learning combined into physical education related
487 activities, though this should be in addition to, not instead of, the usual physical
488 education lesson.

489 • Training programmes need to address teachers' competence (skill development) and
490 confidence (self-efficacy) to deliver active lessons and manage classes in non-
491 traditional settings.

492 • Teachers should be provided with the knowledge of how to incorporate physical
493 activity into their lessons. This training may be supplemented with a range of equipment
494 and resources, separate to those required for other subjects such as physical education,
495 to reduce the time required for preparation. The Physical Education and Sport Premium
496 funding that primary schools in England can access offers opportunities here. Since one
497 key indicator is to engage pupils in regular physical activity, the funding could be used
498 to engage teachers in continuous professional development so as to enhance their
499 knowledge, skills and confidence to teacher physically active lessons.

500

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601

602 Table 1: School characteristics

603

School	Gender	Age range	Approximate No. of pupils	Pupil ethnicity	Proportion of pupils supported by Pupil Premium	Proportion of pupils with SEND	Ofsted rating
1	Mixed	5-11	400	Above average proportion of BME pupils	Well above average	Well above average	Good
2	Mixed	4-11	200	Majority white British	Above average	Above average	Outstanding
3	Mixed	4-11	400	Majority white British (though increasing proportion of BME pupils)	Below average	Below average	Outstanding
4	Mixed	7-11	200	Majority white British	Below average	Above average	Good
5	Mixed	3-11	750	Majority white British	Below average	Below average	Outstanding
6	Mixed	2-11	250	Majority White British	Below average	Above average	Good
7	Mixed	4-11	200	Majority white British	Well below average	Below average	Good
8	Mixed	3-11	250	Majority White British	Above average	Above average	Good
9	Mixed	3-11	700	Above average proportion of BME pupils	Above average	Above average	Good

604

605 Table 2: Participant characteristics

Focus Group	Pseudonym	Gender	School Number	Role in the school	Number of years experience
1	Laura	Female	Primary School 1	Year 2 teacher	3 years teaching
	Mary	Female	Primary School 1	Physical Education (PE) Specialist	5 years teaching
	Nicky	Female	Primary School 2	PE teacher (Manages School Sport Partnership)	6 years teaching
	Becky	Female	Primary School 2	Year 5 teacher	4 years teaching
	Joanna	Female	Primary School 3	Year 3 teacher & PE Coordinator	9 years teaching
	Claire	Female	Primary School 4	Year 4 PE teacher & Special Educational Needs Coordinator (SENCO)	13 years teaching
	Lennie	Female	Primary School 4	Year 4 teacher & PE coordinator	5 years teaching
	Kate	Female	Primary School 4	Year 2 teacher & Religious Education (RE) coordinator	2 years teaching
	Hannah	Female	Primary School 4	Year 3 teacher	8 years teaching
2	Karl	Male	Primary School 5	PE Coordinator	9 years teaching
	David	Male	Primary School 5	Year 6 teacher	3 years teaching
3	Khloe	Female	Primary School 6	Lead practitioner early years	7 years teaching
	Rebecca	Female	Primary School 6	Teaching assistant	4 years teaching
	Jane	Female	Primary School 6	Year 3 & 4 teacher	9 years teaching
4	Jenny	Female	Primary School 7	Year 5 teacher & SENCO	4 years teaching
	Harriet	Female	Primary School 7	Year 3 teacher	2 years teaching
	Natalie	Female	Primary School 7	Year 2 teacher	6 years teaching
	Sarah	Female	Primary School 7	Year 6 & Acting Deputy Head	15 years teaching

5	Adam	Male	Primary School 8	Year 5 teacher & Assistant Head Teacher	19 years
	Andrew	Male	Primary School 8	Head Teacher	23 years
	Danielle	Female	Primary School 8	Year 3 teacher	1 year
	John	Male	Primary School 8	Year 4 teacher	Trainee Teacher
	Laurie	Female	Primary School 8	Assistant Head Teacher & SENCO	18 years
	Rebecca	Female	Primary School 8	Year 1 teacher	2 years
	Theresa	Female	Primary School 8	Teaching assistant	7 years
6	Ben	Male	Primary School 9	Year 3 teacher	7 years
	Aaron	Male	Primary School 9	Year 2 teacher	10 years
	Jessie	Female	Primary School 9	Year 1 teacher	7 years
	Lucy	Female	Primary School 9	Teaching assistant	2 years
	Natalie	Female	Primary School 9	Year 5 teacher	5 years
	Craig	Male	Primary School 9	Assistant Head Teacher	13 years

606

607

608 Table 3 – Thematic Analysis Table

Core theme	Second order theme	First order theme	Example of raw data
Individual factors	Teacher confidence & competence	Teacher ‘ability’	Whether that is fitness or attitude it will prevent people from doing something because you’ve just not got that ability or want to do it. (Focus group 2, Teacher 2)
		Teacher confidence	I’d say another barrier is people not having the confidence or the experience of doing this. Just like I’m not a musical person, if I was to have my lessons with a musical theme... (Focus group 2, Teacher 1)
	Teacher attitudes	Perceptions of teaching & learning	Obviously, we do still need to teach them the fundamentals, it’s not... (Focus group 4, Teacher 1)
		Teacher reluctance	You know I could say myself, I’ve been teaching quite a few years and everyone gets stuck in their own ways (Focus group 4, Teacher 4)
Interpersonal factors	Pupils	Pupil behaviour	Children can get a bit too physical. A certain child in my class, if someone is in their face because they have got more space, they just can’t deal with it. They lash out. (Focus Group 3, Teacher 3)
		Pupils with SEND	Specially in our school we have a lot of SEN children, people in wheelchairs, so we have about two per class, so to have people running around just wouldn’t happen. (Focus Group 1, Teacher 7)
Institutional factors	Physical environment	Available space and layout	We’re quite limited for space (Focus group 4, Teacher 1)
		Preparation time to arrange furniture	So, prep time and resources it takes a lot of time and if you move your classroom around, getting it back where it needs to be. (Focus group 3, Teacher 3)
		Sharing space	And also, it’s [the hall] used for dinner time so you’ve got the dinner staff setting up and clearing up so that takes half an hour either side of the lunch hour. (Focus group 3, Teacher 2)
		Safety	...you get your health and safety head on because then if they fall and break their... you know, there would be those logistics for me (Focus group 1, Teacher 1)
	Available resources	Physical resources	I’d also say resources as well, because if all classes are going to be doing active lessons, do we have enough resources for all of the classes? (FG4, T1)
		Staff resources	I think you would need at least two members of staff. One taking on a supervisory role... making sure that everything is safe and can sort out squabbles but then you would also need that adult that is in there with the children interacting, keeping them motivated, modelling, keeping everything going (Focus group 3, Teacher 1)

	School culture	School expectations	It's essential to have that Head teacher support in everything you do, nothing gets covered unless it has Head teacher approval. (Focus group 1, Teacher 1)
		Governors expectations	...their [governors] big question would be especially that monetary side of it. They aren't money driven but they will be 'how much will it cost' and is that value for money for what he brings to the children (Focus group 2, Teacher 2)
Community factors	Parental expectations	Parental perceptions of learning	I think there would be some parents who are thinking how can we move towards being outstanding and suddenly you're having these, you're not sitting down having these active lessons (Focus group 4, Teacher 4)
Policy factors	Policy influences	National Curriculum content	It's [the curriculum] out of our control, that's a kind of lump it get on with it. (Focus group 2, Teacher 2)
		Ofsted	...we're very much aware of the school development plan and where we need to go because of Ofsted and things like that (Focus group 4, Teacher 3)
	Assessment pressures	Challenges of monitoring and providing evidence	I think a barrier is how we monitor, assess or even provide like evidence of what the children have done in an active lesson. That would stump me (Focus group 6, teacher 3)
		Preparing for SATs	I've got year 6 and you're getting up towards your SATS, I would feel personally I can't give a whole hour to being active every single day when actually we need to drill some of this (Focus group 4, Teacher 3)