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### **Paper:**

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26 **Abstract**

27 Predisposing factors of perceived Physical Education (PE) ability and perceived PE  
28 worth within the Youth Physical Activity Promotion Model are positively associated  
29 with young people's daily physical activity. The aim of this study was to qualitatively  
30 investigate the origins of students' perceived PE ability (perceived competence and  
31 self-esteem) and perceived PE worth (attitude and enjoyment). Fifty-three PE  
32 students, aged 12-14 years (mean=13.18), participated in semi-structured focus  
33 group interviews, which were recorded, transcribed and analysed inductively and  
34 deductively and represented as pen profiles. Analysis revealed three higher order  
35 themes relating to perceived PE ability (external feedback, perceptions of  
36 (in)competence and comparison against peers), and three higher order themes  
37 underpinning perceived PE worth (PE teachers, expectancy-value relationship and  
38 the physical experience of PE). PE should be perceived as interesting, relevant, and  
39 meaningful by students and provide appropriate opportunities for success so as to  
40 influence lifetime physical activity habits.

41

42 **Keywords**

43 Physical Education, predisposing factors, perceived PE ability, perceived PE worth,  
44 qualitative

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51 **Introduction**

52 Regular physical activity is an important contributor to a healthy lifestyle and can  
53 provide immediate and long term health benefits (Powell et al., 2011; Reiner et al.,  
54 2013). Youth physical activity is inversely associated with clustering of  
55 cardiovascular disease risk factors, diastolic blood pressure and waist circumference  
56 (Ekelund et al., 2012; Lee et al., 2012). Biddle and Asare (2011) concluded that  
57 physical activity can improve young people's psychological well-being and mental  
58 health. Research therefore generally proposes that physical activity has numerous  
59 physiological and psychological benefits and that it should be promoted in youth;  
60 however, it is a consistent finding that youth do not engage in sufficient physical  
61 activity to benefit their health (Bauman et al., 2012; Hallal et al., 2012).

62

63 School Physical Education (PE) is an important setting in which to promote youth  
64 physical activity (Fairclough et al., 2012a; Hyndman et al., 2014; Lonsdale et al.,  
65 2013). PE offers a logical and plausible context for engaging youth in regular,  
66 structured physical activity, whilst also developing knowledge, skills and attitudes to  
67 enable participation in lifetime habitual physical activity (Heath et al., 2012; Trudeau  
68 and Shephard, 2005). Therefore, for PE to be impactful, it should strive to influence  
69 factors in adolescents' lives that are related to physical activity, for example  
70 perceived competence and enjoyment (Hilland et al., 2011).

71

72 Welk's (1999) Youth Physical Activity Promotion Model (YPAPM) provides a useful  
73 mediating variable framework to study physical activity correlates in a systematic  
74 way (Baranowski et al., 2003). The model is based on Green and Kreuter's (1991)  
75 Precede-Proceed health promotion planning model, which was developed to provide

76 guidelines for establishing health education programmes for a variety of different  
77 behaviours. The YPAPM adopts a socio-ecological framework by acknowledging the  
78 input of various influences on children's physical activity (Welk, 1999). It recognises  
79 that physical activity participation is the result of interactions among four categories  
80 of factors labelled, predisposing, enabling, reinforcing, and personal demographics  
81 (Chen et al., 2014; Silva et al., 2014).

82

83 Predisposing factors increase the likelihood that youth will engage in regular physical  
84 activity (Rowe et al., 2007) and include self-evaluative and decision-balance  
85 constructs (Welk, 1999). Fox (1991) provided a conceptualisation to unite these  
86 themes, where decisions about physical activity behaviour are reduced to two  
87 fundamental questions that young people may ask themselves when considering  
88 physical activity participation: (1) '*Am I able?*' and (2) '*Is it worth it? Am I able?*  
89 encapsulates variables of how individuals think and feel about their abilities in the  
90 physical domain (e.g. perceived competence and self-efficacy) (Welk, 1999). *Is it*  
91 *worth it?* addresses the cost–benefit assessment of participating in physical activity  
92 (e.g. attitude and enjoyment) (Fox, 1991). It is postulated that young people who  
93 answer 'yes' to both questions are more likely to lead active lifestyles and engage in  
94 regular physical activity (Rowe et al., 2007; Welk, 1999). Although the YPAPM  
95 (Welk, 1999) aims to explain the relationships between factors affecting habitual  
96 physical activity, it may also be applied to the PE setting (Fairclough et al., 2012b).

97

98 In line with the YPAPM's (Welk, 1999) predisposing factors, Deci and Ryan's (1985)  
99 Self Determination Theory (SDT) seeks to explain and help researchers understand  
100 the motivational dynamic that drives human behaviour to take part in or avoid an

101 activity. Within the SDT, motivation is determined by social factors whose effect is  
102 mediated by three psychological mediators: perceptions of competence, autonomy  
103 and relatedness (Ryan and Deci, 2000). In the area of PE, studies have shown a  
104 positive relationship between self-determined motivation towards PE and physical  
105 activity outside of school (Barr-Anderson et al., 2007; Ding et al., 2006; Dupont et al.,  
106 2009; Fairclough et al., 2012c; Jaakkola et al., 2012).

107

108 Furthermore, a sub-theory of the SDT is the Cognitive Evaluation Theory (CET),  
109 which argues that feelings of competence within a particular domain will increase  
110 intrinsic motivation for that activity. It has been reported that this results in enjoyment  
111 and interest in school PE (Wang and Liu, 2007); therefore, students are more likely  
112 to exert effort and persist in the activity (Deci and Ryan, 1985; Haerens et al., 2010;  
113 Ryan and Deci, 2000). In contrast, Gray et al. (2008) found that low levels of  
114 perceived competence has a negative effect on intrinsic motivation, a key element in  
115 producing self-determined behaviour. It has also been reported that PE can leave an  
116 enduring negative effect (Cardinal et al., 2013), and that some students find PE  
117 'humiliating frustrating, embarrassing and barely tolerable' (Portman, 1995: 452).  
118 Furthermore, research suggests that students are dissatisfied with PE because of  
119 alienation and the repetitive nature of skill-based lessons (Carlson, 1995; Lake,  
120 2001; Smith and Parr, 2007). This may result in avoidance of physical activity  
121 outside of school and in later life (Allender et al., 2006; Dagkas and Armour, 2011).  
122 More recently, adolescents' perceived PE ability and PE worth have been found to  
123 be positively associated with daily physical activity (Hilland et al., 2011).

124

125 Welk's (1999) YPAPM has been used extensively in quantitative research, using  
126 scales, surveys and questionnaires, as a framework to evaluate physical activity  
127 correlates, levels and interventions (Ahn et al., 2015; Chen et al., 2014; Heitzler et  
128 al., 2010; Hilland et al., 2011; Seabra et al., 2013; Silva et al., 2014). However,  
129 research is needed to qualitatively explore Welk's (1999) YPAPM predisposing  
130 factors to determine the origins of adolescents' perceptions of PE ability and PE  
131 worth. Therefore, this study is novel as it allows for a more in-depth investigation of  
132 the subject area (Green and Thorogood, 2004), by exploring qualitative data aligned  
133 to the factors of the YPAPM (Welk, 1999) and with analysis outcomes presented  
134 through pen profiles. This information is critical for informing PE interventions to  
135 promote learning and for PE to meet its pedagogical aims in relation to health-  
136 enhancing physical activity. Furthermore, this research can also be used by PE  
137 teachers to help improve their practice. Therefore, the aim of this study was to  
138 investigate the origins of Year 8 and 9 students' perceived PE ability (perceived  
139 competence and self-efficacy) and PE worth (attitude and enjoyment). Young people  
140 in this age group were selected as they are at the stage of early adolescence when  
141 physical activity levels and interests are known to decrease (Riddoch et al., 2004;  
142 Sherar et al., 2007).

143

## 144 **Methods**

### 145 *Participants and settings*

146 Fifty-three students (42 girls; aged 12-14 years) in Years 8 and 9 from three  
147 suburban state schools (one single sex, two co-educational) in the North West of  
148 England participated in this study. The students were purposefully selected based on  
149 their teacher's normative ratings of their PE ability, which is an example of using

150 professional knowledge and insight to inform the research process. Teachers were  
151 asked to rate their students on a 3-point Likert scale anchored by *below average*  
152 *ability* (1), and *above average ability* (3) based upon key stage 3 attainment targets,  
153 where pupils are expected to know, apply and understand the matters, skills and  
154 processes specified in the programme of study (Department for Education, 2013). In  
155 addition, the students completed the Physical Education Predisposition Scale  
156 (Hilland et al., 2009) to assess their perceptions of their PE ability, which matched  
157 the teachers' ratings. This research was part of a larger ongoing study; therefore,  
158 this qualitative paper comprises of a sub-sample of students from that study.

159

160 Students stated on their consent forms if they were willing to participate in the focus  
161 group interviews. They were then invited to participate. This resulted in three groups  
162 with below average PE ability, four groups with average PE ability, and five groups  
163 with above average PE ability, which provided a representative range of students  
164 spanning the ability range. As this study aimed to understand the views and opinions  
165 from students representing a range of ability levels, focus groups were conducted  
166 based on PE ability, stratified by gender. Students were therefore grouped in their  
167 normal PE classes with the presence of friends to foster open and confident  
168 expressions of opinion (Sleap and Wormald, 2001). Consequently, four groups from  
169 each school, comprising three to six students (see Table 1) participated in this study.  
170 The project received institutional ethics committee approval, and written parental  
171 consent and student assent were obtained prior to data collection.

172

173 **Table 1.** Breakdown of the focus groups, by school, gender, year group and ability  
174 level.



School A	School B	School C
Yr 8 girls average ability (n = 5)	Yr 8 boys below average ability (n = 4)	Yr 8 girls average ability (n = 5)
Yr 8 girls below average ability (n = 5)	Yr 8 girls above average ability (n = 3)	Yr 8 girls above average ability (n = 5)
Yr 9 girls above average ability (n = 6)	Yr 9 boys average ability (n = 3)	Yr 9 girls above average (n = 4)
Yr 9 girls below average ability (n = 5)	Yr 9 girls average ability (n = 4)	Yr 9 boys above average ability (n = 4)

175  
176

177 *Data collection*

178 The students participated in in-depth focus group interviews that explored the origins  
179 of their perceptions of PE ability and PE worth. A flexible semi-structured focus  
180 group interview schedule was developed from Welk's (1999) YPAPM. Example  
181 questions are presented in Table 2, which demonstrate aspects of face validity. The  
182 research team have extensive experience of working with children and conducting  
183 research on topics similar to that explored in the current study (Fairclough and  
184 Stratton, 2005; Knowles et al., 2013; Noonan et al., 2016; Ridgers et al., 2012). Prior  
185 to data collection the focus group interview questions were assessed independently  
186 by the authors, a group meeting then took place to reach a collective consensus that  
187 the questions were age appropriate and would answer the research questions. The  
188 focus groups lasted 25-60 (mean = 36.8) minutes, and were conducted during  
189 regular school PE hours in a quiet gym, sports hall or dance studio where the  
190 students could be overlooked but not overheard. Opportunities were provided at the  
191 end of each session for students to make further comments about issues that had

192 not been covered. The first author conducted all 12 focus group interviews. They  
 193 were recorded by Dictaphone and transcribed verbatim with any identifying  
 194 characteristics to the participants, schools or non-participants removed.

195

196 **Table 2.** Example focus group questions aligned to Welk's (1999) YPAPM.

Predisposing, perceived PE ability	<i>Which activities/sports in school PE do you feel confident in, and why?</i>
PE ability	<i>Which activities/sports in school PE do you feel not so confident in, and why?</i>
Predisposing, perceived PE worth	<i>Which activities/sports are your favourite in school PE, and why?</i> <i>Which activities/sports are your least favourite in school PE, and why?</i>

197  
198

199 *Data analysis*

200 The focus groups were transcribed and created 292 pages of typeset data Arial font,  
 201 size 12, double spaced. NVivo software (version 11) was used to facilitate data  
 202 management and retrieval. Thematic analysis of the data followed Green et al.'s  
 203 (2007) phases of data immersion, coding, creating categories and identifying  
 204 themes. Each transcript was read several times by two of the research team, who  
 205 independently analysed the data using a deductive approach, based on Welk's  
 206 (1999) YPAPM and the study's research questions. A subsequent inductive  
 207 approach was then employed to enable emergent themes to be further explored  
 208 (Biddle et al., 2001; Smith and Caddick, 2012). Data were then cross-examined by  
 209 the whole research team until a consensus was reached, comparing and contrasting  
 210 meaningful quotes, clustering quotes into categories and highlighting common

211 themes between participants. The outcomes of this analysis process were then  
212 represented via pen profiles, which provide an efficient method of presenting  
213 outcomes using diagrams, verbatim quotes and frequency data of key themes by  
214 participant (Knowles, 2009; Ridgers et al., 2012). Pen profiles have been used with  
215 previous PE and physical activity research and is considered as an appropriate  
216 method for representing outcomes of analysis (Boddy et al., 2012; Houghton et al.,  
217 2015; Mackintosh et al., 2011; Noonan et al., 2016). Methodological rigor, credibility  
218 and transferability were achieved via verbatim transcription of the data, triangular  
219 consensus and reverse tracking procedures employed from pen profile to transcript.  
220 Results are presented below describing the two general dimensions of perceived PE  
221 ability and PE worth, and the associated higher and lower order themes. Verbatim  
222 quotes are included for illustration.

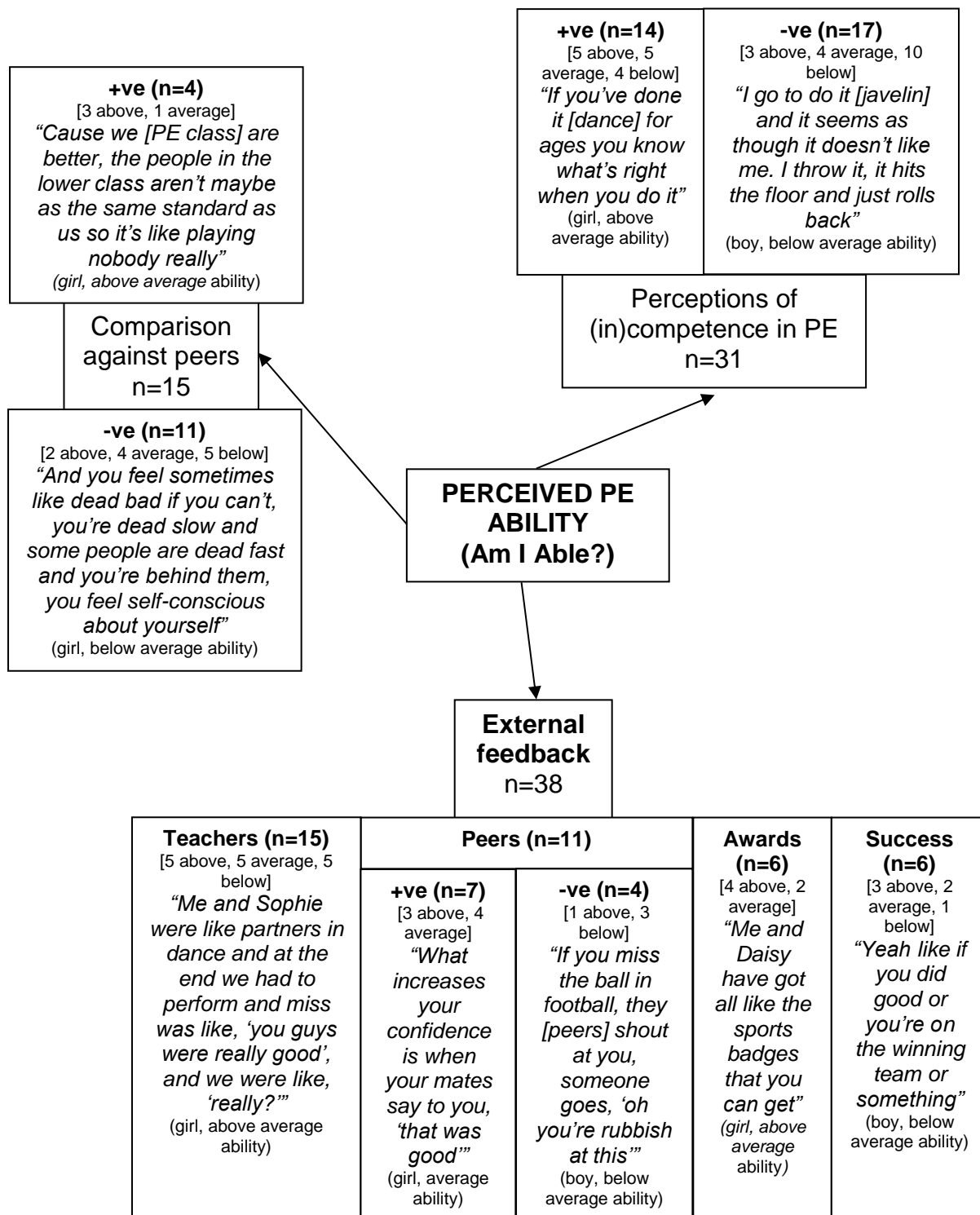
223

## 224 **Results**

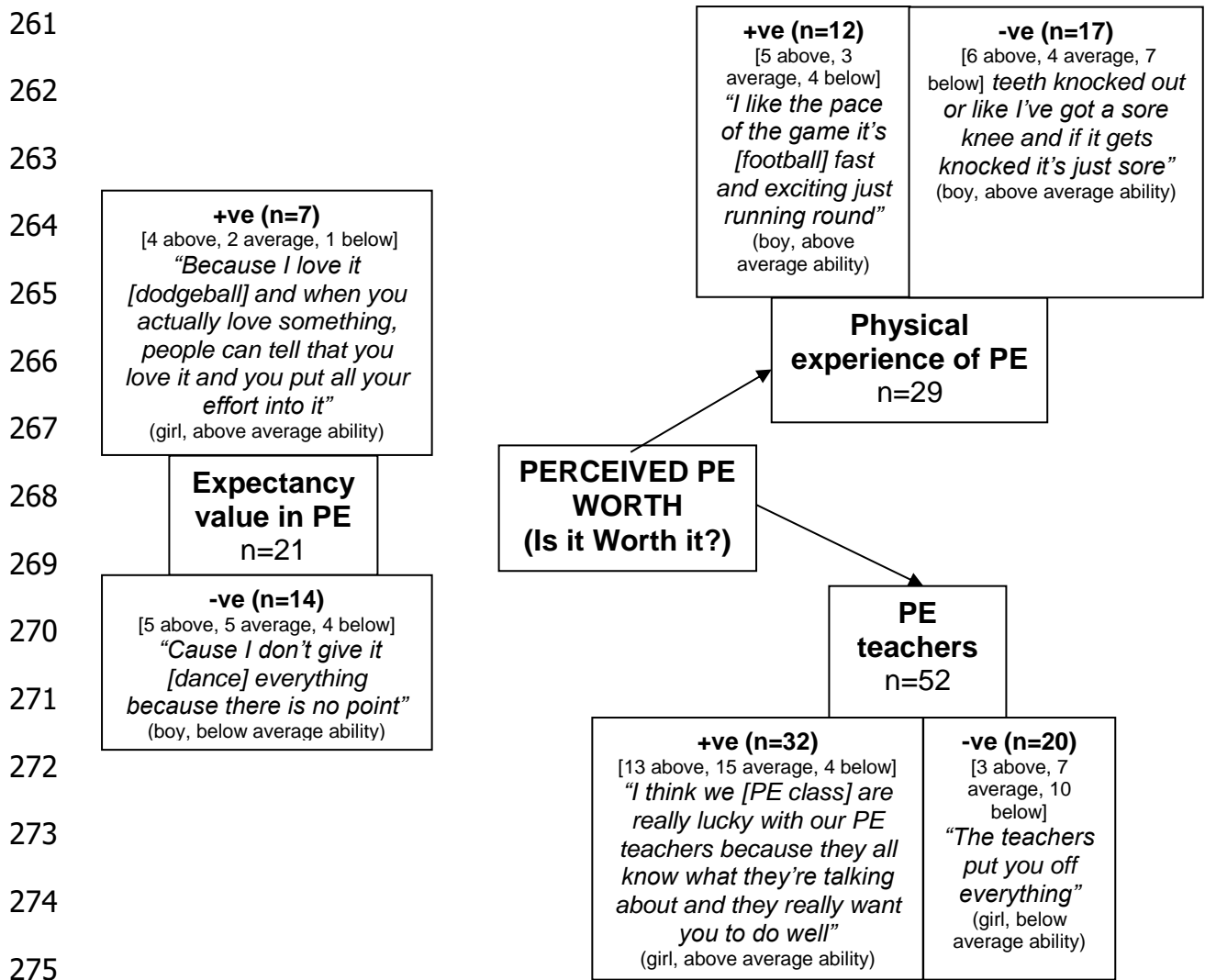
225 Figure 1 displays the higher order themes relating to the general dimension of  
226 perceived PE ability. There are three higher order themes: external feedback (n=38),  
227 perceptions of (in)competence (n=31) and comparison against peers (n=15). Positive  
228 and negative lower order themes featured in both the comparison against peers and  
229 perceptions of (in)competence themes. External feedback involved lower order  
230 themes of teachers, peers, awards and success. Figure 2 displays the higher order  
231 themes relating to general dimension of perceived PE worth. There are three higher  
232 order themes: PE teachers (n=52), the physical experience of PE (n=29), and the  
233 expectancy-value relationship (n=21). Positive and negative lower order themes  
234 featured in all three of the higher order themes.

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**Figure 1.** Overview of higher and lower order themes relating to the general dimension of perceived PE ability.



276 **Figure 2.** Overview of higher and lower order themes relating to the general  
277 dimension of perceived PE worth.

278

279 **Discussion**

280 This study explored the origins of students' perceived PE ability and PE worth using  
281 focus group interviews based on PE ability, stratified by gender. Students reported  
282 that their perceived PE ability emerged from higher order themes including, external  
283 feedback, perceptions of (in)competence and comparison against peers. Whereas  
284 PE teachers, the physical experience of PE and the expectancy value relationship of  
285 participating in PE represented their perceived PE worth.

286

287 *Perceived PE ability*

288 The students conveyed that their perceptions of PE ability originated from external  
289 feedback via a plethora of foundations, including teachers (n=15), peers (n=11),  
290 awards (n=6) and success (n=6). Types of positive feedback from teachers and  
291 peers included praise, encouragement, support and constructive criticism. For  
292 example: 'We [PE class] get a lot of encouragement off the teachers and all that  
293 always makes you feel better, and always boosts your confidence' (girl, above  
294 average ability). This positive feedback appeared to enhance the students'  
295 perceptions of PE ability. For example: 'I feel more confident and want to do it [PE]  
296 more when I'm told I'm good' (above average girl).

297

298 This is in agreement with previous research in this area (Koka and Hagger, 2010;  
299 Koka and Hein, 2005; Wilson and Rodgers, 2004), and is consistent with Deci and  
300 Ryan's SDT (1985, 2000). Those teachers who frequently provide positive and  
301 encouraging feedback are more likely to facilitate development of a higher level of  
302 perceived competence in their students (Koka and Hein, 2003). Nicaise et al. (2006)  
303 state that what adults say in response to adolescents' performances can positively or  
304 negatively influence perceptions of competence. There were also comments with  
305 regards to negative feedback from peers, which also had an effect on the students'  
306 perceived PE ability. These often involved offensive and derogatory comments and  
307 criticism which instigated negative beliefs about perceptions of PE ability. For  
308 example: 'It's a bit of a down putter isn't it sometimes when you're trying your  
309 hardest and your classmates are at you, and like nagging you when you didn't do it  
310 [passing in football] right' (boy, average ability).

311

312 External feedback also emerged from success in PE, whereby students related their  
313 perceptions of PE ability to being on the winning team, intercepting a pass in netball  
314 or getting a rounder. For example: 'I know I can bowl and field and I know I can get a  
315 rounder' (girl, above average ability). Awards, badges and credits also bolstered  
316 perceptions of PE ability. For example: 'Well me and Ben are going for a sports  
317 award tonight, just to say that you've been doing good in sport this year, so it's good  
318 to know that you have been noticed' (boy, above average ability). This in line with  
319 Bernstein et al.'s (2011) findings that success and awards are an influential  
320 mechanism in affecting students' attitudes and perceptions toward a subject.

321

322 Another higher order theme relating to perceptions of PE ability involved both  
323 perceptions of competence (n=14) and incompetence (n=17). Skill competence was  
324 highlighted through perceptions of being confident and able, as an average ability  
325 boy stated, 'I'm good at football', and also through observing improvement and  
326 development in their skills and ability over time. For example:

327

328           Like dance, when we [PE class] first came to the school like not many of us could do dance  
329           could we, some of us had never tried dance before like and we came to this school and we  
330           got to learn more how to do it [dance] and stuff like that (girl, average ability).

331

332 It has been documented that the ability to perform skills, such as throwing, kicking  
333 and jumping, is considered an important prerequisite to sport and physical activity  
334 participation (Stodden et al., 2008). In contrast a number of students (n=17) referred  
335 to their incompetence: 'I'm just not very good at kicking the ball'; 'I can't really throw  
336 that far'; 'I really cannot catch at all'; and, 'I can't run'. Consistent with these quotes,

337 Silverman (1993) concluded that students who have lower skill levels often have  
338 difficulty performing a skill in class and do not receive adequate appropriate practice  
339 trials. Comments were also made about the students' swimming and dance skills in  
340 the current study. For example:

341

342 I couldn't swim to save my life so I just said, "I can't swim", so I could get in the little pool  
343 'cause I don't want to make a show of myself in the big one. So the teacher had to get in the  
344 pool with me (girl, below average ability).

345

346 The students also reported determining their levels of perceived PE ability by  
347 comparing their abilities and performances against other students in their PE class  
348 (n=15). For example: 'Everyone else got to go in the deep pool and our class were  
349 still stood in the shallow pool' (below average ability girl). This is in agreement with  
350 research by Chanal et al. (2005) who stated that individuals use the performances of  
351 classmates to establish frames of reference for evaluating their own performances  
352 and competencies. These comparisons foster both positive and negative feelings  
353 about PE competence. For example: 'When you think you're doing something good  
354 like and you look at Chloe and she's doing it perfect and she's getting the praise'  
355 (girl, below average ability), and, 'Yeah, when like we have like a set sort of drill in  
356 class I like stand out compared to the others, it's really easy' (boy, above average  
357 ability). Barnes and Spray (2013) suggest that PE lessons are rife with social  
358 comparison information. Within the current study this social comparison promoted  
359 positive and negative feelings about students' PE competence depending upon their  
360 self-perceptions of ability. It has been proposed that some children are motivated to  
361 compare by the desire to self-improve, evaluate, and enhance whereas others are



362 not as they may be disaffected and disengaged (Barnes and Spray, 2013; Butler,  
363 1992; Lubbers et al., 2009).

364

365 *Perceived PE worth*

366 Students (n=32) reported numerous positive comments with regards to their PE  
367 teachers, stating that they are supportive, lovely, enthusiastic and knowledgeable,  
368 with the majority of these students (88%) either average or above average ability.  
369 Examples include that their PE teachers 'are just like your best mates really' and,  
370 'they [PE teachers] are very supportive so they increase my enjoyment, they always  
371 push you but they care about you as well, so they're very, very supportive' (girl,  
372 above average ability). Teachers have a very powerful influence and impact on  
373 students' attitudes towards PE (Carlson, 1995; Lake, 2001), for example, Barney  
374 (2003) concluded that teachers positively affect student attitudes towards PE. These  
375 findings are comparable to Ryan et al.'s (2003) study which reported the qualities  
376 students most liked about their PE teachers were that they have good physical skills,  
377 are friendly and know the subject matter. However, this study utilised a 40-item  
378 questionnaire with a five-point Likert scale to assess students' attitudes towards their  
379 PE teachers and classes.

380

381 A number of students (n=20) identified that their PE teachers have a negative impact  
382 upon their perceived PE worth, with 50% of these students below average ability.  
383 They conveyed that teachers showed favouritism, lacked consideration, and are  
384 threatening and patronising. For example: 'Mr A. does shout a lot, if you do  
385 something in a lesson and you're not supposed to do it he like shouts a bit more than  
386 he should do. I hate him, he makes you feel like dead small' (boy, below average

387 ability). This concurs with Myers and Knox (1999) who reported a negative  
388 relationship between perceived use of verbal aggression (e.g. threats, ridicule and  
389 negative comparison) by the teacher and student affect toward the teacher. Negative  
390 associations between verbal aggression and student outcomes of motivation and  
391 satisfaction have been previously reported (Myers, 2002; Myers and Rocca, 2000).  
392 Similarly, Ryan et al.'s (2003) study reported qualities that students disliked most  
393 about their PE teachers, which included that they used cutting remarks, showed  
394 favouritism to skilled students, and could not relate to students. Furthermore,  
395 Strean's (2009) participants reported negative memories of verbal abuse, fear, and  
396 elitism within PE. As an example a student from the current study stated: 'We're [PE  
397 class] like the least favourites, we're like the bench people, if she [PE teacher] had to  
398 put everyone on a team I don't think I'd even get put on a bench' (girl, below average  
399 ability).

400

401 Another higher order theme to emerge involved the physical experience of PE  
402 (n=29), with 12 students (67% average and above average ability) stating that they  
403 liked and enjoyed the inherent physical nature of PE. For example: 'We'll [PE class]  
404 have a laugh and run around and go wild don't we? It's so good' (girl, above average  
405 ability). This is consistent with Arnold's (1979, 1988) concept of 'in movement' which  
406 refers to activities of movement and physical activity as worthwhile in and of  
407 themselves. Enjoyment of PE has also been found to be a major indicator of positive  
408 student attitudes (Azzarito et al., 2006; Subramaniam and Silverman, 2007). These  
409 results support the basic tenets of Deci and Ryan's (1985) CET and SDT. In  
410 contrast a number of students (n=17, 42% below average ability), disliked the  
411 physical experience of PE, due to the potential injury and pain that they may

412 experience whilst participating. For example: 'I don't like it [dodgeball] 'cause I  
413 always get hit in it' (girl, above average ability).

414

415 The final key theme of perceived PE worth involved the expectancy-value  
416 relationship of participating in PE (n=21), with those who like, love, and enjoy PE  
417 reporting putting in more effort and concentration (86% average and above average  
418 ability). For example: 'We [PE class] concentrate more because we want to do well  
419 in those sports' (girl, above average ability). These results are consistent with Eccles  
420 et al.'s (1983) Expectancy-Value Theory (EVT) whereby students' choice,  
421 persistence, performance and effort are influenced by beliefs about how well they will  
422 do (expectancy beliefs) and the extent to which they value the activity (task value)  
423 (Eccles and Wigfield, 1995; Gao et al., 2008). Therefore, students like and  
424 intrinsically value activities in which they have excelled previously, and in which they  
425 are confident of being successful (Xiang et al., 2003). For example: 'We [PE class]  
426 put more effort into it [netball] 'cause we like it and are good at it' (girl, average  
427 ability).

428

429 Additionally, it is a consistent finding that if adolescents experience fun and  
430 enjoyment, they are more likely to participate, persist, exert effort and be committed  
431 to that particular activity (Gao et al., 2012; Seabra et al., 2012; Wallhead et al.,  
432 2012). On the other hand those who disliked PE and felt that there was 'no point'  
433 appeared to exert less effort during PE and have a negative attitude towards it  
434 (n=14). For example: 'When we [PE class] do lacrosse, we just can't be bothered; we  
435 don't try as hard' (girl, below average ability). Participants disliked and did not value

436 activities that they have performed poorly in; therefore, they chose to withdraw which  
437 helps maintain their self-esteem (Eccles and Wigfield, 1995; Yli-Piipari et al., 2013).

438

### 439 **Conclusion**

440 The strengths of this study were that it was underpinned by the YPAPM (Welk, 1999)  
441 and that the results align with Deci and Ryan's (1985) SDT and Eccles et al. (1983)  
442 EVT. Methodologically, the focus groups were deemed to be an appropriate data  
443 collection technique for compliance with ethical and school safeguarding procedures.  
444 Focus groups assembled students within their normal PE classes so as to create an  
445 environment whereby the students could talk openly and freely in the presence of  
446 peers with whom they felt comfortable (Sleap and Wormald, 2001). Whilst the study  
447 was focused on the individual students' perceptions of PE worth and PE ability, a  
448 consensus was explored in the focus groups which will influence class level  
449 intervention. Students identified as high, average and low ability were involved in the  
450 focus group interviews, which allowed origins of perceived PE worth and PE ability to  
451 be explored from a range of students. The secondary school students who made up  
452 the sample were predominantly white British. Also, the convenience sampling at the  
453 schools, in which one was an all girls' school, meant that more girls (42) than boys (11)  
454 were involved in the focus groups; therefore, care should be exercised in making  
455 attempts to generalise findings beyond this group.

456

457 Origins of perceived PE ability and PE worth can influence an individual's decision to  
458 begin or to continue participation in an activity, and so are useful as a means of  
459 understanding young people's physical activity intentions (Martin et al., 2007; Shen  
460 et al., 2012). In reviews, physical activity intentions have been strongly associated

461 with physical activity behaviour (McEachan et al., 2011; Nigg et al., 2011). Therefore,  
462 it remains important to listen to the voices of school students regarding their  
463 experiences within PE. The present study provides a wealth of detail with regards to  
464 how PE teachers influence their students' perceived PE worth and PE ability, which  
465 may be used in intervention design to influence a change in curriculum and practice.  
466 This knowledge can be used by PE teachers to enhance their practice with regards  
467 to physical activity engagement of students. For example, teachers should provide  
468 enjoyable opportunities for success, whilst also ensuring their students understand  
469 the value and importance of PE. This can be achieved by providing a range of  
470 differentiated tasks and activities for students to develop their skills and  
471 competencies, whilst ensuring there is an emphasis on fun. In addition, these tasks  
472 and activities should promote wider values (social interaction, respect, cooperation,  
473 teamwork etc.), which enhance the PE experience and also help promote lifetime  
474 physical activity participation beyond PE and school.

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490 The Authors declares that there is no conflict of interest.

491

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496 **Author biographies**

497 Toni A Hilland - primarily interested in children's physical activity and health, and in particular PE and  
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503 Zoe R Knowles - focus of her research has turned to paediatric fields including both active and natural  
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506 Stuart J Fairclough – mainly interested in children's physical activity, sedentary behaviour, and health,  
507 and in particular interventions to modify behaviours.

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