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Abstract

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

Keywords

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

Introduction

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

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

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

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

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

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

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

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

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

Methods

Participants and settings

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

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

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

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

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

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

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

Data analysis

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

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

Results

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

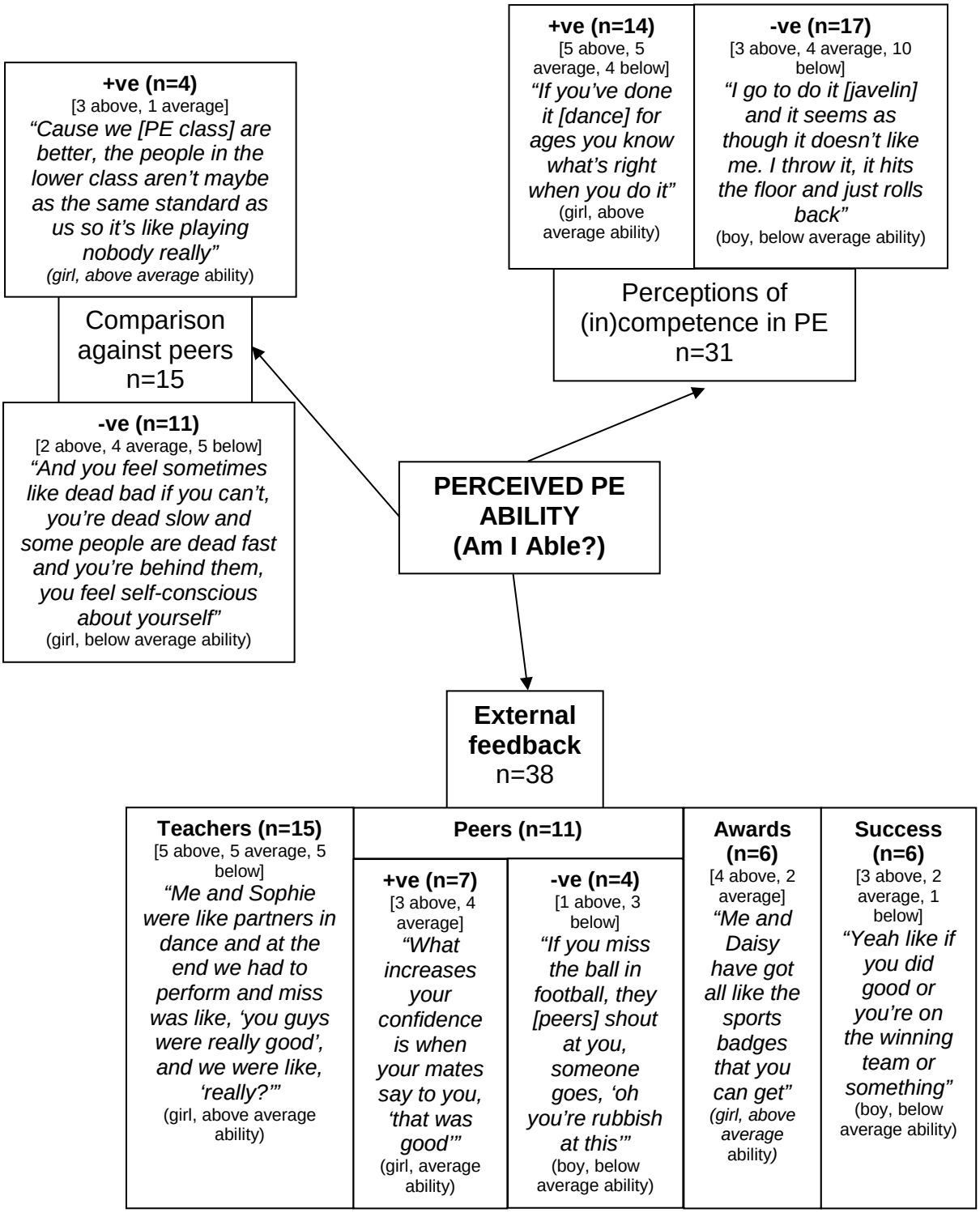

Figure 1. Overview of higher and lower order themes relating to the general dimension of perceived PE ability.

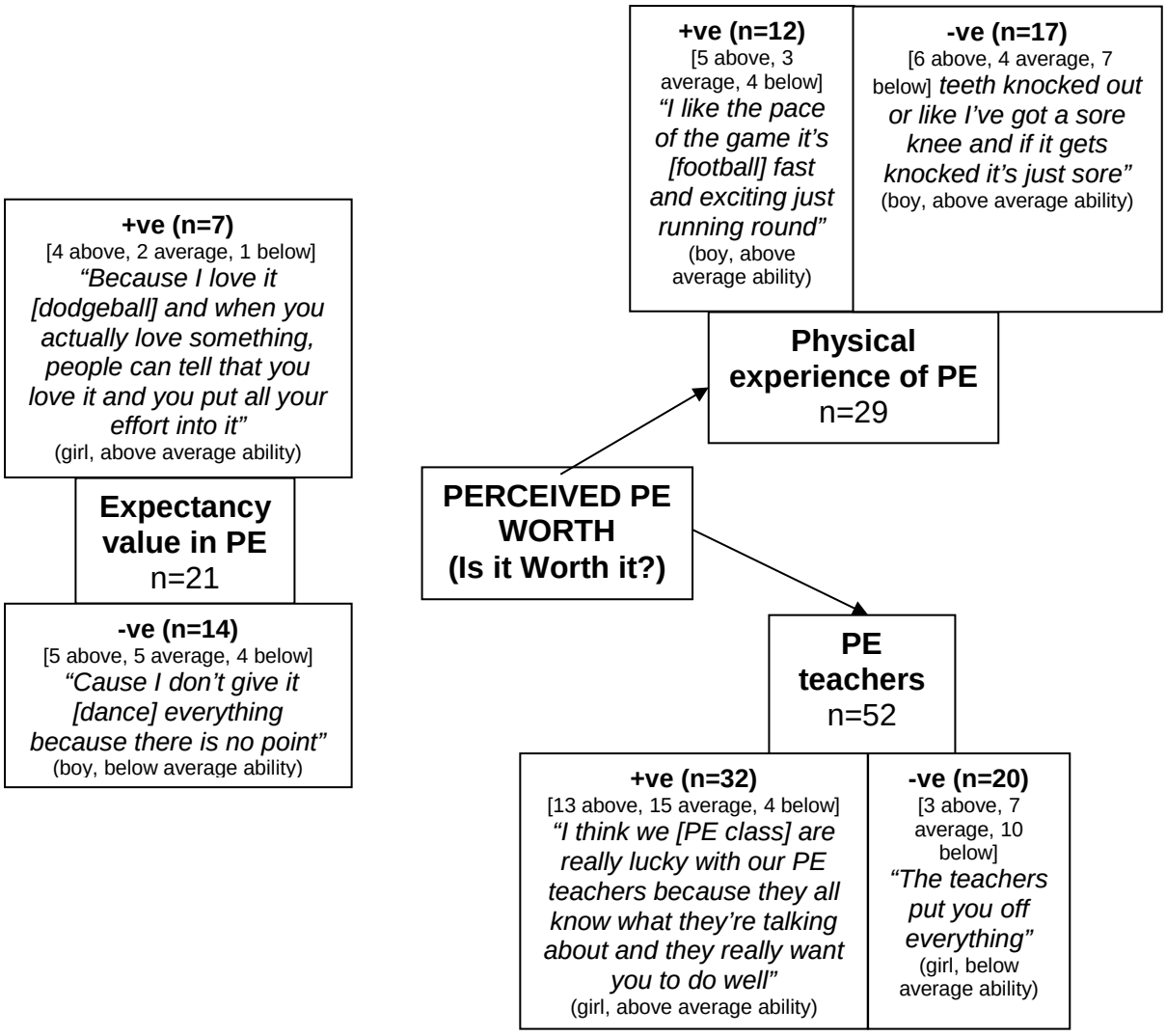

Figure 2. Overview of higher and lower order themes relating to the general dimension of perceived PE worth.

Discussion

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

Perceived PE ability

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

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

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

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

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

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

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

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

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

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

Perceived PE worth

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

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

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

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

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

Conclusion

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

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

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

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Declaration of conflicting interests

The Authors declares that there is no conflict of interest.

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Author biographies

Toni A Hilland - primarily interested in children's physical activity and health, and in particular PE and the promotion of physically active youth.

Nicola D Ridgers - research focus is in patterns of children's physical activity and sedentary behaviours.

Gareth Stratton – areas of expertise is in paediatric exercise science, he is principally interested in translational research and evidence based practice.

Zoe R Knowles - focus of her research has turned to paediatric fields including both active and natural based play in pre-school and school age children and psycho-social determinants of physical activity in special populations.

Stuart J Fairclough – mainly interested in children's physical activity, sedentary behaviour, and health, and in particular interventions to modify behaviours.

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