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The role of the motivational climate in female engagement in secondary school Physical Education: A dual study investigation

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Abstract

This qualitative dual study paper explores girls' engagement in secondary school physical education (PE). Girls' engagement in PE has been at the forefront of changes to the PE curriculum in the UK, after global statistics show only 15% of teenage girls meet the guideline of 60 minutes of daily physical activity. Focus groups with 73 students (N=30 girls and 43 boys) were conducted across four schools in the UK. Data were thematically analysed. Results suggest girls perceive teacher and peer-created performance motivational climates within their lessons. Students specifically indicated a dislike of being watched by those of better ability (boys and girls), gender stereotypes, and enjoyment as factors influencing their motivation to engage in PE. As a result, we suggest schools engage in an intervention to enable peers and teachers to create a mastery focused motivational climate and classes be set by ability for non-contact sport.

Keywords: physical education; gender stereotypes; learning environment; motivational climate; adolescent females

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The benefits of being physically active are well documented; regular physical activity can improve psychological and physical well-being and reduce the risk of non-communicable diseases such as heart disease, diabetes and obesity (Janssen & LeBlanc, 2010; Warburton & Bredin 2017). Despite this, decline in participation in sport and physical activity (PA) has been stated, especially in girls who reportedly engage in less PA than boys (Whitehead & Biddle, 2008). The World Health Organisation (WHO; 2011, 2016) recommend that children aged 8-18 years participate in 60 minutes of vigorous intensity activity each day. However, globally only 15% of girls aged 11-15 years meet recommended levels (WHO, 2011) and only 8% of girls aged 13-15 years in the United Kingdom (Townsend, Wickramasinghe, & Williams, 2015). The low levels of reported PA in girls combined with the disparity seen when compared to boys, has seen girls identified as a high priority group for PA promotion (Camacho-Minano, LaVoi, & Barr-Anderson, 2011).

A variety of settings have been used to encourage PA in young people, however, school-based interventions have been found to be most effective (Edwardson et al. 2015). Physical Education (PE) will often be the first exposure to PA for most children (Somerset & Hoare,2018) and is considered fundamental within effective physical activity promotion, providing young people with the skills, confidence and attitude to be active in their own time (AFPE 2015, 2020). Whilst the decline in PA happens in both girls and boys, it is more pronounced in girls and continues to increase with age (AFPE 2015; Sherar et al. 2007). Furthermore, most recent research from global physical activity report cards appear to suggest that physical education provision in a number of

countries is high, yet overall PA levels remain low (Hughes et al. 2018; Edwards et al. 2018; Zembura, Goldys, and Nalecz 2016; Standage et al. 2018; Schranz et al. 2018). This suggests a disconnect between the simple provision of PE and the successful delivery and internalisation of the learning outcomes of the subject to motivate and generate knowledge and skills that can impact lifelong behavioural change. For example, intervention research in this area has been equivocal, yet when changes have been noted, the consideration of the impact of peer relationships have been important, with those that has addressed the specific needs of girls being most successful (Camacho-Minano et al., 2011; Edwardson et al., 2015). This research appears to support the directive of the AFPE within the UK which emphasises the importance of taking the pupil voice into consideration when planning, delivering and evaluating physical education initiatives (2015).

Biddle, Mutrie, and Gorley (2015), stated that "girls feel more comfortable where comparisons with boys are eliminated, body image and self-presentational concerns are reduced" (p.172-173). Similarly, Cooky et al. (2016) explored key facilitators and barriers to female sports participation, female athletes in the study stated that low body image leads to insecurities in physical education classes which may serve as a barrier to participation. A recent review stated negative experiences in PE, peer disapproval and stereotypes as barriers to girls engagement in sport (Somerset and Hoare 2018). These findings support those by Wetton, Radley, Jones, and Pearce (2013) who reported that girls aged 15-16 years faced four main barriers to participation: (a) internal factors (e.g., self-esteem); (b) existing stereotypes (c) other hobbies; and (d) teachers. Given the low rates of PA, barriers to participation, and the importance of early learning experiences, especially specialist teaching of PE (Kirk, 2005), the PE

experience must be enhanced for girls to improve the likelihood in engagement in PA outside of the PE setting. The environment in PE is vital in shaping students' perceptions of both PE and PA and consequently can influence life-long motivations to engage. Whilst increasing engagement in PE lessons has yet to show a clear and sustained impact on subsequent impact on PA, there remains a dearth of research on understanding pupil experiences.

Motivational Climate

The motivational climate (MC) is the social environment that coaches, teachers, and peers create and perceive. Specifically, the MC refers to an individual's perceptions of the goal structure and is a function of the group's goals, underlying reward system, interactions among group members and individual interpretation of the specific social structure (Ames & Archer, 1988). A mastery based climate reflects an individualistic reward structure (personal improvement through effort and promote task-orientation over time) and is characterised by effort-based goals and rewards as well as learning and improvement. A performance based climate is said to reflect competitive reward structures (comparison of performance to others and fosters ego-orientation over time), emphasise social comparison, and reward people for out-performing others. Where coaches and teachers create a mastery climate, intrinsic and self-determined forms of motivation are more likely. Standage, Duda, and Ntoumanis (2003), conducted a study looking at students' contextual motivation in PE, using constructs from self-determination theory (SDT; Deci & Ryan, 1985) and achievement goal theories (Ames, 1992) to predict PA intentions. Results suggest that a mastery climate positively impacted on mediating variables (autonomy, competence, and relatedness) to foster self-determination, and that self-determined motivation positively predicted leisure time

PA intentions, whereas amotivation was a negative predictor. Similar positive associations between a perceived mastery climate and self-determined forms of motivation have been reported (Standage, Duda & Ntoumanis, 2006; Standage et al., 2007; Zahariadis et al., 2002). Within education and PE, it has long been proposed that the implementation of TARGET principles will aid teachers in creating a mastery climate (Ames, 1992; Epstein, 1987; Treasure; 2001) and, in turn, enhance the development of more self-determined forms of motivation towards PE.

The importance of significant others (e.g., PE teacher) in clear for children when they rely on competence and relatedness information from those individuals. However, during later childhood/adolescence, individuals rely primarily on their peers for this information (Horn, 2004). Arguably, this brings into question the sole focus on teacher created mastery climates. Students of secondary school age (11-16 years) typically gather a greater quantity of competence and relatedness information from their peers which influences motivation to engage. Motivation is a vital component of an individual's choice to engage (or not) in PE and for PA to become part of a healthy and active lifestyle throughout the life course. Exploring peer-created MCs is key to enable a greater understanding of student motivation within PE.

Peer-created Motivational Climate

The peer-created MC is evidenced as a key environmental factor that relates to intrinsic motivation, goal orientations, and competence perceptions (Hein & Joessar, 2015). Work by Vazou, Ntoumanis, and Duda (2006) examined the potential behavioural interactions between coach and peer-created MCs in youth sport. The researchers found that enjoyment was positively predicted by mastery focussed MCs. Whilst there is evidence which strongly links mastery MCs to intrinsic motivation and

need satisfaction, the extent to which students experience peer-created mastery MCs is still questionable. Warburton (2017) examined the temporal patterns and concurrent effects of teachers and peers on the motivational climate in secondary school PE to student's achievement goal adoption. Warburton found that perceptions of a teacher mastery climate decreased over the course of the school year, while perceptions of a peer performance climate increased. Whilst there is a small body of research considering peer-motivational climate in the PE context, most research explores this area from a youth sport/athlete perspective.

In light of the small body of research in the area of peer-created MC in the PE setting, this multi-study research aimed to fill the current research gap through qualitatively exploring girls' engagement and experiences in secondary school PE through providing opportunity for both female and male voices to be heard. The aim of study one was to explore girls' participation in secondary school PE. Informed by study one, study two aimed to explore boys' perceptions of girls' participation in secondary school PE.

Method

A critical realist approach was used to explore perceptions and experiences of girl's participation in PE within secondary schools in East Midlands, U.K. Through combining ontological realism and epistemological constructivism the search for causation within the critical realist approach helps researchers explain social context and events and lends itself to practical policy recommendations to address social phenomena such as girls engagement in PE (Fletcher 2017; Ronkainen and Wiltshire 2019). Critical realists claim that there is a single reality – despite being highly complex and multi-layered – and this reality exists no matter how it is viewed by particular

researchers (Archer 2007; Ryba et al. 2020; Wiltshire 2018). As such in the context of these studies there is a lack of girl's engagement within PE; this does not change depending on how this phenomenon is viewed. Critical realism accepts that there are different valid perspectives on reality, rather than multiple realities (Maxwell 2012, p.9). Through the use of thematic analysis of focus groups from both girls and boys, this study aimed to explore boys' and girls' perspectives on girl's participation in PE offering explanations as to why experiences may or may not occur (Ronkainen and Wiltshire 2019). The study used thematic analysis (Braun & Clarke, 2006, 2012, 2013), a widely used approach in qualitative sport and exercise research, as a guide for analysis and interpretation of the findings. Thematic analysis is a method not aligned with a particular philosophical approach and as such it enables data analysis through a critical realist lens; acknowledging the ways individuals make meaning of their experience, and, in turn, the ways the broader social context impinges on those meanings, while retaining focus on the material and other limits of 'reality' (Braun and Clarke 2006). Specifically, we adopted information from Braun and Clarke's (2019) most recent reflexive commentary to guide our thematic analysis approach. Reflexivity is key to enabling critical reflection of the knowledge produced and our role in producing it (Braun and Clarke 2013). Further details are included in the data analysis section. This multi-study research explored participant's beliefs and experiences surrounding girl's participation in PE and PA. Study one took place in one secondary school academy (see Table 1) and focused on female student perspective (N=30). Study two took place in four secondary schools (see Table 1) and explored male student perspectives (N=43). All PE lessons in the schools were single sex with the exception of inter-form competitions and some after-school clubs. Class sizes ranged from 20-32 students and,

with the exception of athletics, male teachers tended to teach male students and female teachers would teach female students. After obtaining ethical approval from the University board of ethics and permission from school Principals and Heads of PE, recruitment began. Study one recruitment took place in the autumn term and study two recruitment took place during the spring term.

Participants

Participants were provided with information sheets and consent/assent forms. All participants were recruited during their PE lessons. Cluster sampling was used in all schools with the assistance of the Head of PE to ensure students ranged in their physical/skill ability in accordance to their set (higher, middle, and lower) as well as their year group.

Study One. Study one included girls recruited from years 7, 8, 9, 10, and 11 from one school. Inclusion criteria were that all students were female and under the age of 16 and to have attended the school since the beginning of year 7 to ensure the same length of exposure to their PE environment. All levels of physical activity were welcomed e.g. those who only engaged in PE lessons to those engaging in regular exercise or sport outside of school. In total 30 students (*M* age = 13.4 ± 1.6 years) participated in this study. Of the 30 students, seven did not engage in any additional PA outside of school. The remaining 23 students engaged in a range of activities such as going to the gym, swimming, gymnastics, dance, and football.

Study Two. Study two recruited boys from years 7 and 10 across four different schools (one school was the same as the school in study one). Students in Year 7 had a mean age of 12.3 ± 0.53 years and those in Year 10 had a mean age of 15.2 ± 0.49 years. Only one participant did not take part in any additional PA outside of PE and the

remaining participants engaged in a variety of sports including, football, cricket, basketball, and rugby. Inclusion criteria were that participants must have attended the school since the beginning of Year 7 to ensure the same length of exposure to their PE environments. Using students from Years 7 and 10 provided opinions and information from two distinct age groups; year 7 students were at entry level within secondary schools and year 10 students had been at the school for four years thus, having greater experiences in their current environment. Year 11 students were not recruited due to GCSE exams.

Data Source – Focus Groups

In total five focus groups were conducted in study one which entailed one per year group with a range of three to seven participants per focus group. A focus group is a way of removing the emphasis of the adult-child relationship where a child may respond in a way they believe the researcher desires (Heary and Hennessy 2002). This format can allow the researcher to discover the child's view of their world as they discuss the phenomena with their peers. In these studies, focus group were conducted using flexible interview guides. Topics and questions were carefully designed to encourage participants to talk with each other and draw out common group understandings (Ennis & Chen, p.220, 2012 – RM in PE and Youth Sport) The use of focus groups to collect data enabled more in-depth data to be collected through probing questions and participants discussing and debating various points of view (Jones & Gratton, 2014).

Focus groups in study one lasted between 22 minutes and 30 minutes (Mean duration: 26.3±3.6 minutes). Eight focus groups were conducted in study two which included two per school and one for each year group at the school with either five or six participants per focus group. Focus groups in study two lasted between 35 minutes and 48 minutes (Mean duration: 41.5±4.5 minutes). Focus groups were conducted by the

lead author, took place during the students' normal timetabled slot for PE and located within the PE department to provide participants with familiar surroundings. Focus groups have been successfully used in the PE setting (Fisette, 2013; Slater & Tiggerman, 2010) to understand motivation and barriers towards PE and PA in girls. Focus groups enabled more in-depth data to be collected through probing questions and participants discussing and debating various points of view (Jones & Gratton, 2014).

Questions were formatted into two sections. The first section in both studies aimed to gain contextual knowledge on engagement and feelings towards PE/PA and provide an opportunity to build rapport and create a comfortable atmosphere. This was especially key in study two; As a female researcher exploring male perceptions of female participation in PE it was key to build a good rapport with the participants to overcome any barriers regarding openness and honesty of answers given (Jones & Gratton, 2014), and thus improving rigor. This was achieved with the addition of a card game naming 10 male and female elite athletes. Within study one, the second section facilitated discussions that explored girls' experiences of engaging in PE. Questions encouraged discussions about working as individuals and as part of a team/group work, as well as feelings about the types of sports offered and opportunity for choice. Within study two, the second section encouraged participants to discuss girls' engagement in PE. Questions stimulated conversations and debates about how the boys felt about girl's engagement in PE/PA, how they felt about taking part in PE with the girls and visa-versa and finally influences surrounding gender stereotypes (full interview guides available on request). Probing questions and cues were used to encourage participants to expand further if necessary. All focus groups were audio recorded and field notes were

taken throughout to describe aspects of the focus groups which would not be captured through audio recording such as body language and, movement and tone of voice.

Data Analysis

The focus groups were transcribed verbatim and, in conjunction with the field notes, analysed using reflexive thematic analysis (Braun & Clarke, 2013; Braun and Clarke, 2019). Specifically, Braun and Clarke's six phases of thematic analysis were used as a guide to reflexively analyse data throughout in line with a critical realist approach focussing on reporting the assumed reality evident in the data. (a) Familiarisation: Through re-reading transcriptions and listening to original recordings multiple times the lead author "immersed" themself within the data. An iterative approach was also used whereby the researcher studied field notes between each focus group to ensure any new themes were addressed in future focus groups to aid social agreement (Smith, 1984) and aided familiarisation of data. (b) Generating initial codes: The lead author generated initial codes across the data set using QSR NVIVO (Version 11, 2017) to collate data relevant to each code. To ensure data analysis was in-line with critical realism, the lead author checked/or re-analysed these themes by hand to ensure the focus on participants' perspective of reality (Ronkainen and Wiltshire, 2019). The following three phases (searching for themes, collating codes into potential themes and reviewing themes) were conducted on two further occasions where all authors went through a cyclical process to review, reflect, and critically discuss codes assigned to the data to draw out the nuances of the girls' and boys' perspectives of girls' engagement in PE. For instance, there was much critical discussion around participants' experiences of being watched within PE and the extent to which this influenced their engagement as the pupils discussed a variety of experiences and the authors wanted to ensure they

represented the participant experiences accurately. (c) Searching for themes: Codes were collated into potential themes by the lead author whereby codes were written out on post-it notes and gathered into potential themes. This enabled an active engagement in the process by allowing codes to be easily moved around thereby enabling an overall view of the phenomena and the themes (e.g. in study one the following was moved from interest in personal growth to the individual in their social context "P126: Maybe the more confident ones don't see the ones that aren't confident because they are just focussed on what they are doing. Maybe they should include everyone else more and make others feel more confident". It was moved to the individual in their social context as it seemed more relevant to peer relationships within this theme than ability when able to look at the themes holistically in the manner described above). (d) reviewing and defining themes: The approach taken during the previous phase combined with the role of critical friends facilitated the reviewing and defining themes. By referring back to the original transcriptions and notes, revisions and theme names were developed to ensure they represented the perceived reality of the participants and their experiences within secondary PE. For example, the theme named 'the individual in their social context to showcase participants' was redefined and renamed from motivational environment to present the experiences of girls more effectively within PE. (f) Producing the report. Seen as the final stage of Bruan and Clarkes (2006 & 2019) thematic analysis, producing the written report allowed further reflexive engagement with the data. This resulted in the changing in two of the theme names to represent the codes (and participants perceptions) more explicitly and that extracts included were vivid examples to that showcase the reality experienced by participants of engaging in physical education. Rigour was established throughout the analysis process through a critical

appraisal of themes to broaden the interpretation of the data beyond the first author. The remaining authors acted as critical friends who challenged themes and example quotes, encouraged reflection on, and construction of a richer more nuanced reading of the data (Smith & McGannon, 2018; Braun & Clarke, 2019). Overall, six higher order themes were developed through the thematic analysis of both data sets, three for each study (see Table 2).

Results and Discussion

Study One

Results. During the thematic analysis three higher order themes with a number of lower order themes were developed to address the primary aim of the study, which was to explore girls' engagement and experiences in secondary school PE. The three higher order themes were: (a) the individual in their social context, (b) interest in personal growth, and (c) What's on offer? Participants discussed how various factors influenced their motivation to engage fully in their PE lessons within each theme.

The individual in their social context. This first theme included lower order themes: being watched, the role of teachers, relationships with peers, and the role of gender. Participants discussed feeling a reduced sense of confidence when they felt they were being watched by peers who they perceived to be of a higher ability. Even being just with the girls did not completely alleviate one individual's feelings of low confidence:

> I don't think I'm very confident and I think not so much now, because it's just with the girls this year, but sometimes I don't put in as much effort as I should do because I am always thinking about what I look like and stuff like that. I'm really self-conscious. (Participant 30, study 1)

Additionally, participants discussed how teachers affected their motivation to engage. Students disliked being separated from their friends by teachers and for students in years 10 and 11 they felt that teachers did not plan the lesson or let them do what they wanted which they found boring. One student stated:

> I think that I used to enjoy it more because the lessons were more planned and structured but now the teachers just tell us to do what we want, and we don't really do a lot in lessons and it gets quite boring. (Participant 20, study 1)

Finally, participants consistently discussed how their relationships with peers influenced their motivation to engage in PE. The majority liked to be with their friends; “I look forward to it as you're able to mix with all your friends” (participant 26, study 1). Similarly, a small number of participants (and less than anticipated) discussed a dislike of participating with boys; one participant discussed how her feelings for basketball changed when she realised it was just girls playing: **“**I thought it was in front of the boys and I was like 'ahh no, no, not in front of the boys', then I found out it was all girls and I just like basketball” (Participant 37, study 1)**.**

***Interest in personal growth*.** Participants discussed two main topics within interest in personal growth and its influence on their levels of engagement in PE. They discussed how their knowledge and desire to learn was important to engagement. Learning more about netball in the lunchtime club helped one participant engage more in her netball PE lessons due to a better understanding of how to play: “It helped me loads with my actual performance in lessons because we learn tactics and skills that I can use in games” (participant 22, study 1).

Participants also reported how comparisons against peers of a better ability decreased their feelings of confidence. Participants discussed this in the context of whole-year cross-country and group work.

> It depends on the other people's ability in the group because if they really care about the sport and winning and stuff like that and are all really good at it they expect you to be as good as them and it's harder to keep up. (Participant 36, study 1).

What's on offer? Participants discussed numerous factors relating to what was on offer in terms of physical activities which affected their enjoyment. Having a variety of sports to do over the course of their PE lessons was important. Participants had conflicting views on the extent to which this occurred. Key stage 4 (KS4; years 7, 8, and 9) students felt they had sufficient variety. One participant said "there is lots of variety in our lessons" (participant 3, study 1). However, many key stage 5 (KS5; years 10 and 11) students discussed how they found PE lessons repetitive and boring: "I agree with everything being a lot more boring, because it's really repetitive and we're just doing the same thing every single week, there is nothing new to look forward" (participant 16, study 1).

Additionally, participants discussed the importance of choice to improve enjoyment and ultimately engagement levels. Some students felt that they did not have much choice over the type of sports/activities and who they worked with. Others felt they were provided with a choice when they asked for example: **"**at the moment we're doing the fitness suite, and me and a few of my friends said we didn't want to do that so we're doing Zumba which is a lot more fun than weights and things like that." (Participant 32, study 1).

Discussion. These results provide an insight into the importance of key socialising influences within the PE context and about how these influences then affected aspects related to competence and enjoyment. These findings appear to support an emerging body of work that emphasises the importance of peer support within an optimal environment (Coen et al. 2019; Elliott, Bevan, and Litchfield 2019). The lens of the motivational climate has traditionally been adopted when investigating the PE environment (e.g. Ames, 1992; Epstein, 1987; Treasure; 2001). However, the focus has been primarily on the adult influences, specifically, on what teachers should and should not do to better engage young people in PE. Yet, these results suggest that participants perceived a peer created performance climate and that this was more influential than the teacher created climate which was rarely discussed by the pupils. This is perhaps unsurprising given that as children progress into adolescence they are more influenced by peers than significant adult figures (Horn, 2004).

Students expressed a fear both of being watched and of not being as good as individuals they perceived to have a higher ability than them. This suggests a perceived performance climate as described by Ames (1992), where social comparison is a key component. Within this context, the participants compared themselves against those of higher ability regardless of gender. Interestingly, this goes against previous research which has suggested that social comparison regarding ability within the PE context is most commonly perceived within gender dimensions (Biddle et al., 2015). Participants did discuss social comparison against boys, however, this explicitly related to low body confidence and the roughness of boys in team sports rather than a difference in ability.

Our results suggest that, whilst teachers are encouraged to create mastery-climates, participants had mixed perceptions of the extent to which this was done. These

mixed perceptions were consistently split between KS4 and KS5. Participants in KS4 described more teacher behaviour (than those in KS5) which suggested a perceived teacher created mastery climate with components pertaining to some, but not all, of Epstein's (1987) TARGET framework. KS4 participants discussed feeling like they had a choice and variety of tasks provided by teachers in which they enjoyed and wanted to engage. However, KS5 participants felt this was not provided and resulted in a poorer quality of motivation to engage during the PE lesson. This is similar to other findings within the PE setting whereby those who perceived a mastery climate displayed more intrinsic forms of motivation to engage and those perceiving a performance climate displayed either amotivation or extrinsic forms (Harwood et al., 2015; Standage et al., 2003; Standage et al., 2006).

Additionally, results suggest that participants experienced autonomy need dissatisfaction. Need dissatisfaction occurs when an individual perceives an activity as unrelated or disconnected from their psychological needs (Cheon et al., 2018). Students felt that teachers did not allocate them to work with their friends suggesting that their relatedness needs were not being met consequently leading to boredom, disengagement, and a poorer quality of motivation to engage in PE. More specifically to KS5 participants, results suggest that students perceived their competence needs were dissatisfied, when teachers did not plan or provide structure to the lesson leaving students feeling bored and unchallenged. This corroborates with research from Cheon et al. (2018) which states need dissatisfaction can result in boredom and amotivation. Research has suggested students require positive vicarious experiences within PE in order to facilitate future engagement in exercise outside of school (Kirk, 2005). Results would suggest that for these participants their vicarious experience was not wholly

positive due to a perceived peer created performance climate and teacher behaviour that did not support the development of basic psychological needs which contributed to participants' lack of motivation to engage in their PE lessons.

Study Two

Based on the results of study one which highlighted the importance of the peer-created MC and girls dislike of participating in PE with boys', study two aimed to investigate boys' perceptions of girl's participation in secondary school PE.

Results. The three key themes were: (a) perceived self-efficacy, (b) awareness of and level of conformity to gender stereotypes, and (c) the structure of the PE environment. Within these themes and corresponding sub-themes, participants discussed how they felt participating in PE with girls, how they perceived girls felt participating in PE with boys, influences on their awareness of gender stereotypes (particularly the media), how their behaviours conformed to the stereotypes, and finally boys discussed with differing views how the structure of their PE lessons could be changed to overcome some of the barriers to participation they raised.

***Perceived self-efficacy*.** Participants discussed a variety of topics including effort levels, ability and perceived self-efficacy, boys' perceptions of how girls' feelings influenced their (girls) participation in PE, and the importance of enjoyment. Effort was perceived to be more important than ability. The latter of which was not: "the main point of PE" (Participant 4, study 2) and that girls were doing themselves an injustice by not trying evidenced by one participant: "It's like they're putting themselves down, they're not showing their true potential of themselves" (Participant 5, study 2).

Participants also spoke about their perceptions of how girls' feelings towards PE could influence participation. A small number of participants were unsure as to why

girls didn't engage in PE lessons. However, the majority of participants spoke about how they thought girls felt self-conscious, nervous, and embarrassed to participate in front of people. In the context of running, one boy explained: "Some of them don't actually run, they just jog… I think it might be because they might be embarrassed to run in front of everyone" (Participant 54, study 2).

Enjoyment and fun was perceived as important to their own engagement in PE. Interestingly, the boys compared the differences between single and mixed gender PE lessons and how the different dynamic could contribute to an enjoyable lesson:

> I feel like also when you're doing sport with the girls it's a bit more relaxed and less competitive, and the guys are sort of like they get very aggressive and competitive with each other whereas the girls are just kind of doing it because they enjoy it. (Participant 40, study 2)

Awareness of and level of conformity to gender stereotypes. Participants discussed gender stereotypes in sport including influences of family and friends, however, the main focus was the influence of the media. Participants were acutely aware of how gender was portrayed in the media and discussed how this portrayal may influence girls' participation:

> you rarely see women's teams on TV as much as men's teams and I think part of that is you grow up with that and then your sport is sort of thought as a man's thing and girls then think of sport subconsciously as something they shouldn't be getting involved in. (Participant 42, study 2)

Boys were aware of how their own behaviours could reinforce gender stereotypes. They provided examples of where they had commented or joked about girls

performing a skill incorrectly or telling a boy they performed a task like a girl if they had not shown much skill:

> when guys say something negative towards another guy, they might refer to it as something girly, like you hit or you throw like a girl and that could affect both ways of how a girl might react. She might be motivated to prove them wrong or it might be quite demoralising to suggest that because they're male when they're bad they're closer to being female. (Participant 40, study 2)

Boys also discussed how this behaviour was bi-directional as girls also made "negative" or "mean" comments to boys. However, it was evident that the participants in the focus group saw how the examples they provided of boys' behaviour could reinforce gender stereotypes and the negative impact it could have on girls' participation.

Structure of PE environment. Lastly, participants provided differing views on how they could overcome some of the barriers they perceived the girls to face in PE, and the frustrations girls had during current mixed gender PE. A number of participants thought it would be best to be separated by gender especially for sports they described as "typically boys' sports" (e.g. rugby and football). In contrast, a number of participants suggested that, excluding contact sports, it would be best for all PE lessons to be mixed by gender but split by ability, similarly to how other subjects are commonly taught (e.g., English and Maths):

> like I said earlier a lot of boys in my PE group they literally all do athletics outside of school, they all do another sport outside of school … so, I feel like they (girls) might be a bit embarrassed. I know I feel embarrassed when I see X do 1.75 on the high jump and I can hardly, I'm tiny I can hardly get past the third

one, you know what I mean. It makes you go I'm a bit crap at this sport so maybe it makes them feel a bit unwanted. (Participant 41, study 2)

Overall, participants provided an overview of how they perceived girls felt doing PE with boys, boys' behaviour towards girls, how the media influenced their own and girls' perceptions of sport, and what could be done to overcome the barriers such as embarrassment and self-consciousness.

Discussion. Similar themes emerged from the discussions with boys, albeit expressed in different ways. Although boys can potentially be more competitive than girls in PE, boys still perceived and strived for a mastery-climate. Additionally, components of individual task-orientation were highlighted, for example, boys discussed the importance they place on effort and trying one's best over ability (task-orientation). Interestingly, they discussed that boys also displayed lack of effort during PE sometimes and in both cases (boys and girls) was something that they found equally frustrating. Although debated, the majority of participants thought that PE should be about learning skills and trying your best, key components of Ames' (1992) mastery climate.

In participant discussions surrounding their (boys) perceptions of girls' feelings when engaging in PE with boys, results suggest that boys were aware of feelings described in study one (e.g., low body confidence, self-consciousness, and embarrassment). Boys also expressed feeling self-conscious, nervous, and embarrassed when competing in some sports due to not being as good as the most talented individuals, along with a fear of being watched. This aligns with research by who discussed the notion of 'peer policing' within PE environments in which "gendered identities are heavily policed and judged" (p. 690). Metcalfe further described how this

was not a uniquely female phenomenon, further supporting the findings of the current study.

Boys presented some thoughts on how to overcome common barriers (embarrassment and social-comparison, which are components of a performance MC; Ames, 1992). Some participants suggested that grouping by ability instead of gender might overcome the fear of being watched by others, especially where fear is predominantly when participating with those of a perceived higher ability. Splitting by ability was portrayed as a way to overcome the disparity between boys' and girls' participation, highlighting that all their other subjects at school are organised by ability not gender. It is possible that splitting participants by gender can exacerbate the divide in male and female sports. This is an interesting suggestion as it contradicts the dominant approach within pedagogical research that advocates the development of "girl friendly" curricula (Enright & O'Sullivan, 2010) and the TARGET framework (Epstein, 1987) which suggests that student groups should be heterogeneous rather than homogenous. Participants also suggested that students could and should be more supportive towards each other. Contrary to (as they perceived) the popular discourse of only boys being mean to girls in PE boys suggested this was a bi-directional behaviour. Boys also experienced "mean" comments from girls which also discouraged boys' participation.

It is evident that boys have a reasonable understanding of how girls feel participating in PE with boys and expressed that the current narrative is perhaps not truly inclusive and reflective of the whole picture within the PE environment. Boys expressed a desire to improve the PE environment for both genders, through the improvement of grouping by ability and also improved peer-interaction. Thus,

suggesting that the progression of the perceived peer-created MC from a performance climate to a mastery climate is key to increasing self-determined motivation for boys as well as girls during PE.

General Discussion and Conclusion

The results from both studies corroborates the recent work in this area that emphasises the importance of peer interactions (e.g. Coen et al., 2019; Elliot et al., 2020; Metcalf, 2018). Furthermore, the results of these studies also emphasise a drive for a focus on promotion of high levels of effort, enjoyment and self-improvement over a focus on ability and social comparison which clearly align with the underpinning characteristics of Achievement Goal Theory (Ames, 1992; Nicholls, 1989). Whilst adopting a motivational climate perspective is not new within research in this area, the focus to date has predominantly been on influencing and enhancing the teacher-created motivational climate, most commonly through Epstein's (1987) TARGET framework. The combined results of these studies suggest that the focus now needs to turn to understanding how to enhance the peer-created MC to better contribute towards engagement in PE. The importance of high levels of enjoyment and competence emphasised within this study also align with current policymakers who recognise the importance of these core concepts in shaping an individual's attitude to PA throughout the life span(Sport England 2016). Results suggest that girls perceived a performance climate during their PE lessons. Boys also acknowledged that their behaviour did not always support and encourage girls' engagement, but that girls also behaved in this manner towards boys. Boys suggested PE classes be set by ability rather than gender for non-contact sports and that students need to be more supportive of each other during PE, which could improve the motivational climate. However, having PE set by ability,

as in other secondary school subjects, does not conform with present guidelines for PE teachers in light of the TARGET framework (Epstein, 1987) which endorses heterogeneous groups. However, considering more recent research which suggests that peer-influence holds a higher value compared to a significant adult as children progress into adolescence (Horn, 2004), it is important to consider this alternative structure to PE lessons. It is clear that a change in perceptions of the peer-created MC is needed to encourage girls' participation and positive experiences in PE which may lead to an increased likelihood of engagement post-16.

Strengths and Limitations

This study has presented unique findings in the field of girls' engagement in PE. However, it is important that these are considered within the parameters of the strengths and limitations of the present study. Firstly, the in-depth approach taken in exploring girls' participation in PE through focus groups and the inclusion of both girls and boys, makes the study not only unique in the field but provides a more holistic insight into the phenomena (Jones & Gratton, 2014). Secondly, we used cluster sampling (collaboratively with the Heads of PE departments) along with the inclusion criteria to enhance the validity of the research accounts. This ensured empirical adequacy through the inclusion of the most suitable participants (Ronkainen and Wiltshire 2019). Thus, increasing confidence that adequate data had been collected to support the interpretations and explanations offered in these studies and enabling various opinions to be voiced.(Ronkainen and Wiltshire 2019). Thirdly, the remaining authors acted as critical friends and challenged themes and example quotes to provide more insight into the phenomena, offering complex and alternative perspectives (Smith and Sparkes 2014). Additionally, in order to minimise the risk of students answering with social

desirability, extra lengths were taken by the main author to ensure that rapport was built through informal conversation and an initial card game where participants had to name male and female elite athletes. This served to create a comfortable and open environment where participants felt at ease to answer questions honestly and ensured the sincerity of the researcher (Tracey, 2010).

A limitation of the study was that the population characteristics were narrow (e.g. predominantly White British ethnicity) and the extent to which these findings relate to other cultures is unknown. Additionally, all recruited schools had either good or outstanding Ofsted results at the time the studies were conducted, and all had a relatively low percentage of students on free school meals (≤ 10.5%; see Table 1). A further limitation of the study was that taking the perspective of one or two theories may limit the interpretation, even with the use of critical appraisal during thematic analysis. The use of a colleague not on the research project in the capacity of a critical friend would be recommended for future studies (Smith & McGannon, 2018). Finally, the order in which the two studies were conducted may lead the boy's voice to appear stronger than the girls as due to time it was not viable to go back to the girls to discuss the boy's suggestions regarding mixed ability PE. Whilst the strength of the boys' voice may appear as a limitation in overpowering the girls voice, the boy's presented solutions to problems they perceived which is a unique finding within the study.

Future Research and Applied Implications

Although, teachers are equipped to engage with inclusive pedagogies, results from this study suggest this does not necessarily filter down to engagement levels and that further exploration into peer relationships is a key point for future research. The results suggest PE lessons be grouped by ability rather than gender where the sport is

non-contact to create an improved mastery MC. However, more research is needed to see if this is a viable idea relating to practical considerations, teachers' opinions, and also girls' opinions. Furthermore, it is recommended that an increased focus is placed on improving student awareness of the motivational climate they create and equipping them with the appropriate tools e.g., behaviours to create a mastery climate. Although we propose this is done through a co-produced intervention incorporated into PE lessons, further exploration is required to inform and contribute to intervention design. Specifically, more research is required to understand how this is best delivered i.e. by or through pupils themselves and furthermore to understand the teacher role within facilitating this and how this may influence the training and development of PE teachers.

To conclude, this qualitative research suggests that peer-created motivational climate is more relevant in this context for both boys and girls and that steps are needed to ensure students create and perceive a mastery-climate. The research suggests that where girls perceive a peer-created performance climate they may be less motivated to engage in their PE lesson. In order to achieve this, we propose that future research should investigate further the design and implementation of an educational based intervention to equip students with the skills needed to create a mastery MC. Results also suggest the benefits of PE being set by ability rather than gender where sports are non-contact in nature. We would advocate this approach based on further research surrounding teacher and girls' perceptions, and on the feasibility of its introduction.

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Table 1
Summary of school characteristics

School	Type*	Age Range	Pupils in School	Eligible FSM (%)**	National Inspection (Ofsted) Effectiveness Grading***
1 (Study one and Study two)	Academy Converter	11-18	1488	8.1	Outstanding
2	Foundation School	11-18	1209	10.5	Good
3	Academy Converter	11-18	1963	4.2	Outstanding
4	Foundation School	11-18	759	10.5	Good

*For further information on school type see http://www.education.gov.uk/edubase/glossary.xhtml.
**FSM=Percentage of pupils in school eligible for and claiming free school meals, also see edubase glossary
***Ofsted is a non-ministerial department of the UK government that inspects and regulates schools' effectiveness, see https://www.gov.uk/government/organisations/ofsted

921 Table 2
922 Themes from study 1 and study 2

Study	Higher order theme	Description	Lower order theme
Study One	The individual in their social context	Participants' discussed how a number of aspects of their PE social environment influenced their engagement in PE lessons; where participants felt they were being watched and observed they would engage less especially where they felt less confident in the sport. They also discussed the influence of the type of environment that teachers create which effects their engagement levels in PE lessons for example, not putting people with their friends and having a lack of structure to the lesson.	Being watched The role of teachers Relationships with peers The role of gender
	Interest in personal growth	Participants discussed how their knowledge and opportunity to increase their knowledge effected their engagement levels within PE; where participants had good knowledge of rules or tactics for example, they would engage more. Participants also discussed how the variety of ability in a group decreased the amount they engaged in their PE lessons.	Learning and knowledge Ability
	What's on offer?	Participants discussed how what was on offer in terms of activities effected the extent to which they enjoyed taking part in PE lessons. They discussed how they enjoyed having a variety of sports/activities and that when they had some choice over what they could do they enjoyed it more and those without choice perceived its provision would make PE enjoyable for them. Participants also discussed that the amount of effort they put it would depend on how much they enjoyed a certain sport/activity.	Variety Effort Choice
Study Two	Perceived self-efficacy	Participants discussed feeling frustrated at people's lack of effort rather than a lack of ability and that they would feel more enjoyment if everyone just tried their best. This was not restricted to girl's behaviours but also to boys who did not try hard in PE. They also showed a mixed awareness of how their behaviour might affect how girls feel taking part in PE with boys and what they could do better to help girls overcome	Effort levels Ability Boys perceptions of how girls' feelings influence participation Importance of enjoyment

		negative feelings towards taking part in PE with girls.	
	Awareness of and level of conformity to gender stereotypes	Participants showed a high level of awareness of gender stereotypes and discussed several sports that they described as either girls or boys, or gender-neutral sports. They also discussed throughout the focus groups the influence of the media on beliefs surrounding boys and girl's participation in sport.	Media influence Boys' behaviour conforming to stereotypes Boys' behaviour supporting girls in PE Type of sport Family influence
	Structure of the PE environment	Participants discussed the positives, negatives, enablers and barriers in terms of the structure of PE lessons. They discussed having separate PE lessons for boys and girls and having mixed gender PE lessons.	PE class organised by gender PE class organised by ability.