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Understanding students' experiences in a PE, health and wellbeing context: A self-determination theory perspective

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Abstract

Framed by Self-Determination Theory, this investigation explored student experience as they engaged in their Physical Education (PE), Health and Wellbeing curriculum in Scotland for the first time. We aimed to uncover the features of various learning environments that appeared to impact upon student motivation in PE over the period one academic year. We carried out focus group interviews with students from one state secondary school (secondary 1 and 2; ages 12-14) and its feeder primary schools (primary 7; age 11 years) immediately after a selection of PE lessons throughout the year. Furthermore, to provide some additional context for our analysis, the students in each year completed a questionnaire (pre-post) to identify and understand their motivation for PE over time. The results from the interviews indicated that students had a number of positive and negative PE experiences. However, the results from the questionnaire demonstrate that the students' experiences during the first year of this 'new' curriculum had little impact on their motivation for PE. The findings highlight the importance of mixed methods research to provide context-specific account of student experience. This detail may be critical for the development of informed and effective pedagogy that supports student learning, health and wellbeing.

Keywords: Physical education, health and wellbeing, learning experiences, self-determination theory, basic needs,.

Understanding students' experiences in a PE, health and wellbeing context: A self-determination theory perspective

In many countries around the world, Physical Education (PE) is explicitly and directly responsible for the health education of children and young people. PE teachers are now responsible for the holistic development of students' physical, social, emotional and mental wellbeing. This is the case in Scotland, where PE is located within the curriculum area of Health and Wellbeing (HWB). Policy guidelines for PE describe a range of 'experiences and outcomes' for students to ensure that teachers plan and deliver a broad and effective PE, HWB curriculum for *all* (Scottish Government, 2009). More specifically, these guidelines are intended to support teachers to create learning experiences that contribute positively to students' physical, social, emotional and mental wellbeing. It is suggested that this is achieved by placing the student at the heart of the teaching and learning process, adopting student-centred teaching approaches and offering personalization and choice (Scottish Government, 2009). In this context, teachers have the autonomy to develop a curriculum that caters for the unique needs of their students. The intention is to create a more meaningful curriculum that will increase engagement and enhance learning. In the PE context, ensuring that girls have a meaningful and successful learning experience is particularly important given the substantial evidence to suggest that they are more likely to disengage from PE and physical activity as they move into adolescence (Azzarito, Solmon, & Harrison, 2006; Camacho-Minano, LaVoi, & Barr- Anderson, 2011; Kirby, Levin, & Inchley, 2012). Indeed, a recent body of literature exists which aims to explore girls' experiences of PE in Scotland (Kirby, Levin & Inchley, 2012; Knowles, Niven, & Fawkner, 2014; Mitchell, Gray, & Inchley, 2013). However, given the inclusive nature of the curriculum in Scotland, it is both appropriate and timely to investigate the experiences of both boys and girls in their PE context. Understanding how learning environments are experienced by students is critical if

teachers are to effectively evaluate their curriculum and pedagogy, thus ensuring that future decisions about student learning are meaningful, relevant and based on the needs of the student. In the Scottish context, while we know something about how PE teachers have experienced this 'new' curriculum (MacLean, Gray, Mulholland, & Horrell, 2015), there is currently no research evidence that has investigated the views and experiences of students.

There is a growing evidence base for the application of Self-Determination Theory (SDT: Ryan & Deci, 2000) for exploring students learning experiences and wellbeing in PE (Ntoumanis, 2005; Mitchell, Gray, & Inchley, 2013; Standage & Gillison 2007). SDT is a useful framework in this context because it takes account of the basic psychological needs of the learner, as well as the environmental conditions in which the learner acts. SDT proposes that the impact the PE context can have on student learning and wellbeing is influenced by the way in which the learning environment satisfies three innate psychological needs: feelings of relatedness, competence and autonomy. The concept of relatedness is the degree to which an individual feels a sense of belonging to, or connection with the environment (Perlman & Goc Karp, 2010). Competence is the learner's desire to interact effectively with the environment and experience success and control (Koka & Hagger 2010) and autonomy is their feeling of agency, free will and choice (Ryan & Deci, 2006). When basic needs are satisfied in PE, students' inner motivational resources are nurtured (Reeve, 2009) and autonomous motivation is enhanced. This reflects an autonomy-supportive learning environment which is associated with positive classroom functioning, improved educational outcomes and positive psychological wellbeing (Burton, Lydon, D'Alessandro, & Koestner, 2006; Cheon & Reeve, 2015). However, when basic needs are not met, individuals perceive the environment to be more controlling. This more controlling form of motivation regulation undermines students' positive functioning in PE because it induces a sense of pressure and

creates an obligation to attend to negative emotion (Reeve, 2009). Motivation regulation, therefore, is an important factor in understanding student wellbeing in PE.

Deci and Ryan (2000) identified two distinct forms of motivation regulation: autonomous and controlled. Autonomous motivation includes intrinsic, integrated and identified (more or less internally endorsed) motivation, where individuals engage in a task out of choice, pleasure or because they are valued in relation to the individual's personal goals or sense of self-worth. The concept of integrated regulation (when the activity supports the individual's sense of self-worth) is generally not studied in children or adolescents since it requires high levels of self-awareness and introspection (Van den Berghe, Vansteenkiste, Cardon, Kirk, & Haerens, 2014). Controlled motivation consists of external regulation and introjected regulation (or internally controlled), where the individual is motivated by external contingencies such as reward, punishment or avoidance of shame (Ratelle, Guay, Vallerand, Larose, & Senecal, 2007). Reeve (2009) suggests that acknowledging students' capacity for self-regulation is important because it adds a developmental perspective to the teaching and learning process. From this perspective, teaching and learning in PE becomes more focused on the long-term development of students to support their self-regulated learning and potentially contribute to their positive wellbeing. Importantly, this is a key aim of the Scottish curriculum, yet is something that has to-date been largely under-researched (Reeve, 2009). Furthermore, research that has been carried out in this field has principally adopted a positivist stance, where students are invited to complete questionnaires that 'measure' their motivation more generally, rather than exploring specific moments deemed to be significant to students, by students themselves. In one of the few qualitative studies, Mitchell, Gray and Inchley (2013) used SDT as a framework to explore the perspectives of disengaged female students as they in engaged in an intervention that aimed to increase their physical activity levels during PE. In doing so, the authors demonstrated that when teachers began to create

opportunities for consultation and support, the girls became more likely to engage in PE. Importantly, this research moved beyond simply describing what 'effect' PE can have on students, and instead highlighted what PE can be for disengaged females, considering their lives, experiences and contexts. Consequently, using SDT as a conceptual framework, this investigation aimed to extend the qualitative work in this area, and explore the experiences of both male and female students as they engaged in a PE, HWB curriculum for the first time over the period of one academic year. Specifically, in an attempt to develop a detailed and context-specific account of the students' experiences, we explored their motivation, perception of competence, relationships and feelings of choice or volition in a variety of PE contexts. To provide additional context for our analysis, we adopted a mixed method design and also investigated students' motivation regulation and basic needs satisfaction more generally, from the time just before the new curriculum was implemented to the end of the first year of implementation. Taken together, we hope to provide a rich account of students' lived experiences and offer a unique lens through which to understand SDT in context. The findings from this research may also provide teachers with a detailed understanding of how the learning environments they create might be experienced by their students.

Methods

Participants and Setting

Educational settings are complex places; they are full of richness, diversity, contradictions and relationships. Consequently, a mixed methods design was used to gather both qualitative and quantitative data to provide a deeper understanding of students' PE experiences (Creswell & Plano-Clark, 2007). Students from one urban state secondary school (known as: AHS) and its feeder primary schools (known as: BPS, CPS and DPS) (n=333) took part in the study. All schools were situated within a two-mile radius. The specific year groups that

participated in the study were primary 7 (P7; 11/12 years old), secondary 1 (S1; 12/13 years old) and secondary 2 (S2; 13/14 years old).

The curriculum. All students participated in a PE curriculum set within HWB and the study was conducted during the first year that the new PE curriculum was implemented in each school. The main changes that were implemented were directly aligned to the official curriculum guidelines (Scottish Government, 2009). For example, all of the 'experiences and outcomes' for PE were integrated more or less within each activity in order to more explicitly and effectively create a broader range of learning experience for students. Further, all PE teachers claimed to adopt more student-centred, constructivist approaches to teaching and learning (Scottish Government, 2008). In addition to this, secondary school students were offered a choice of curriculum in their second year. The first option they could choose from included dance, exercise to music, badminton, gymnastic, fitness, basketball, team building, orienteering and athletics. The second option they could choose from included volleyball, badminton, rugby, fitness, football, basketball, team building, orienteering and athletics. The main rationale for offering this choice was to encourage more girls to participate in PE. The teachers in the school believed that the first option included more 'feminine activities' that would appeal to the girls, and that the second option would be more appealing to the boys. In general, all schools adopted a multi-activity curriculum model. The activities that were covered for all three year groups were very similar and included activities such as basketball, gymnastics, dance and athletics.

Permission to carry out the research was obtained from the head teacher in each school and all students provided informed parent/guardian consent and informed assent to take part in the study. Students were told that their participation in the study was voluntary, that they were free to withdraw at any time and were assured that their responses would

remain confidential (pseudonyms have been used for the schools and the students). The study was approved by the University Ethics Committee.

Measures

Focus Groups Interviews. To gather qualitative data relating to specific PE experiences throughout the year, a sample of 6 students from each year group took part in focus groups interviews at the end of a selection of PE lessons (see Table 1). To support the interview and analysis processes, the researcher observed each lesson and took field notes. The students that took part in the interviews were selected by the PE teacher and represented a range of students in terms of gender, motivation and ability in PE. The exception to this was the S2 class. As the classes in S2 were single sex, only boys were interviewed. The same students were used for interview on each occasion. The interview questions were semi-structured in nature and the questions were based their positive and negative experiences in relation to the things that made them feel motivated (or de-motivated), their perception of competence, their relationships and their sense of choice or freedom in the selected PE contexts. Each interview lasted around 30 minutes. At the end of each question, the researcher summarised the students' comments to check for understanding. This also allowed the researcher to take notes that highlighted the key issues raised. The interviews were recorded using a digital voice recorder and transcribed verbatim.

Insert Table 1 here

Basic Psychological Needs Scale. The Basic Psychological Needs Scale was a modified version of the Basic Psychological Needs at Work Scale, where the term 'work 'was replaced by the term 'PE'. This was a self-report instrument designed to measure the

degree to which the needs for autonomy, competence, and relatedness are satisfied in a given context. For the purposes of working with children we used the shortened 9 items version with three items for each subscale of autonomy, competence and relatedness (Sheldon & Filak, 2008). The students responded to items such as 'I think of the people in my PE class as my friends' and 'I have been able to learn interesting new skills in PE' on a 5-point Likert scale where each statement could be scored 'very true for me' to 'not at all true for me'.

Self-Regulation Questionnaire. The Self-Regulation Questionnaire (Ryan & Connell, 1989) measured the degree to which participation in PE was self-determined, or whether they took part because of outside pressures or rewards. A modified version of the Self-Regulation Questionnaire for gymnastics was used, where the term gymnastics was replaced with the term PE. There were three items per subscale (external regulation, introjected, identified, and intrinsic), except for external regulation (only 2 items). We combined external and introjected regulation to form controlled motivation and intrinsic and introjected regulation to form autonomous motivation. The students responded to items relating to why they do PE such as 'for the pleasure I feel when I do PE' and 'for the pleasure of learning new skills' on a 5-point Likert scale where each statement could be scored 'very true for me' to 'not at all true for me'.

Data Analysis

Focus group interviews. The responses from all of the interviews were grouped according to the question themes, namely motivation, perception of competence, relationships (relatedness) and feelings of choice or volition (autonomy). This provided a context specific and more focused framework for analysis (Taylor-Powell & Renner, 2003). Within each 'group', we then carried out an inductive process of identifying emerging thematic categories for each lesson. This was carried out by the first researcher, and independently by the second researcher. This entailed considering the 'text' and developing

phrases that explained and summarized key issues in order to identify initial categories (Podlog & Eklum, 2006). Reference to the field notes taken by the researcher during the lessons and the interviews further supported the initial analytical process. Following from this, both researchers discussed the emergent themes until they agreed on the main categories for the subsequent analyses. The first researcher then carried out a constant comparison method of analysis (Glaser, 1964) to identify similarities between initial categories across each group. This led to the development of higher order categories giving an overall impression of the key issues discussed by the students for all of their lessons.

   Questionnaires. The main purpose of the questionnaire was to provide some additional context against which to explore the qualitative date. Consequently, descriptive statics were calculated for all variables at the beginning and the end of the academic year. All students completed the questionnaire at the start of the academic year. However, due to a very busy transition schedule in BPS, it was not possible to administer the questionnaire to students from this school at the end of the academic year. Indeed, due to the longitudinal nature of this study, several students from each school did not complete the questionnaire at the end of the academic year. Where there was missing data, scores were corrected by using the mean of the other subscale items. For example, if there was a missing response for item 2 in the autonomy subscale of the Basic Psychological Needs Questionnaire, the missing value was replaced with the mean participant score for items 1 and 3. After exclusion criteria were applied, the sample consisted of 234 participants.

Results

Questionnaire

We introduce the results section with a brief description of the findings from the questionnaire, thus providing a useful context against which to position the students' responses from the focus group interviews. In general, there were slight downward trends for all variables across the school year. There were no differences between primary and secondary students in the three psychological needs, however, male students scored higher in autonomy and competence than female students (see Table 2). Male students also scored higher in autonomous motivation and controlled motivation compared to female students. Finally, there was a reduction of autonomous motivation more than controlled motivation over the school year.

Insert Table 2 here

Focus Group Interview

The focus group interviews gave students an opportunity to discuss their lived PE experiences aligned with their motivation and basic needs. The analysis highlights the ways in which basic needs interact in a real-life setting, and offers a unique, complex, integrated and context specific perspective on how SDT can be used to understand student experience. Interestingly, and somewhat in contrast to the questionnaire results, the experiences identified by the students were both positive and negative for both boys and girls.

Motivation (or de-motivation) in PE

Recognising performance improvements. Students from all year groups enjoyed and were motivated by recognising improvements in their performance and other situations

related to developing their performance. They claimed that they were more motivated to persist in tasks when they had lots of opportunities to practice, which included sufficient time on task and space (usually on court) to play, and when they received positive feedback about their performance from the teacher or their peers. By contrast, negative feelings and lack of motivation were experienced when their performances were negatively judged by others, or if time to practice the task and the space to practice was limited. During the S1 badminton and P7 tennis lessons for example, students expressed frustration at their lack of court space and how this inhibited their practice. In relation to the gymnastics lesson that was observed, students from CPS described how their teacher spent far too much time explaining the tasks, task that they do every week: *No, because you don't get enough time. Because you don't get enough time to actually do the stuff because the teacher is too busy explaining stuff that is basically the same as we do every week (Jack)*

For many of the girls from each year group, opportunities for learning and receiving encouragement from friends were viewed positively and associated with high levels of motivation, successful performances and enjoyment. For boys, however, feelings of enjoyment in PE were more related to winning or scoring.

Challenge. All the groups interviewed discussed the notion of being more motivated when they experienced challenge or felt a sense of achievement, stating that they were more likely to persist in their learning and felt happy when they could do something well. In the S2 badminton lesson, for example, one of the boys said: *I just felt good because every time you won a game you moved up and you'd play people that were better. (Oliver)* Being presented with a challenging task made some students more determined and try harder. For example, one of the tennis activities (BPS) involved attempting to hit a small target on the floor with the ball. This was perceived by many students to be very difficult, however for one student, this made him try even harder because he found it 'quite challenging'. However,

for some students, when the task was too difficult it meant that they would not persist. For example, Ava from the S1 class knew that she could not perform a balance that was on the task card, so she simply did not attempt to do it. She said: *There's no way I could do that. I just took another card and did an easier one. (Ava)*

Equally, however, if the task was too easy, motivation was negatively affected. For example, during the S1 Scottish Country dance (a form of social dancing in couples or groups) lesson, the girls said that they were bored and became disinterested because the steps were too easy. Amelia stated: *They are boring. You do it over and over again. It is all the same steps.*

Perception of Competence

Challenge and competition. Once again highlighting the link between challenge and perception of competence, the students recognised when they had performed well and associated this with activities that were challenging (but achievable) and competitive. The S2 boys described how the 'ladder' tournament they engaged in during the badminton lesson was a challenge because they could try to beat someone who is better than them: *Like I tried to climb ladder. Because if people are better than me you can try and develop the skill and try and beat them. (Harry)*

Working with others. The notion of competition was important for all groups in terms of how they described their performance. Here they directly linked their good performances to winning or scoring points. However, for some tasks where scoring points and winning were not the main objectives, perception of competence was often developed as a result of working with others. For example, after the tennis lesson, students from BPS talked about how their performance was enhanced when they worked with peers who performed at a similar level of ability.

Negative evaluations (poor performance). Although students recognised their successful performances through positive peer or teacher feedback, equally, they recognised their poor performances through the observations and negative evaluations by others. For example, in the CPS gymnastics lesson, students had to perform a sequence in front of the class. Here, the girls in the class talked about being laughed at by the boys and the boys that were interviewed talked about the girls smirking at them, as evidenced in the comments below:

Fine apart from when I was on the floor, somebody was obviously laughing at me because it looked quite wrong but then there are some people in the class who are afraid to perform in front of the class and when they do the boys show them no respect. (Isla)

Some of the girls were just smirking and you can tell … they weren't laughing with us, it was laughing at us. (Noah)

Students also talked about poor performances in relation to tasks that were too difficult. For example, during the S2 badminton lesson, one boy (Oscar) described his performance level in light of a 5-0 defeat by another student, claiming that he could not hit the shuttle or serve, he said: *I didn't do well because every time it got hit to me I couldn't hit it back and I can't serve as well. He beat me five nil and he only shot it five times.*

Choice/Sense of freedom

Choice is important. During the interviews, students were able to recall experiences in PE when they were offered choice during the lessons, or they were provided with some responsibility. They valued having some choice or responsibility and stated that it developed

their independence. None of the students from any of the year groups liked to be made to do a task by the teacher, especially if the task was perceived to be boring. However, students from both the S1 and the S2 class stated that they would engage in the task anyway in case they received a punishment from the teacher.

The S2 boys described a number of instances where they were provided with choice or given responsibility in each lesson. For example, in football, the team captain had to lead the warm-up and each team was offered choice about which learning task they should engage in. Indeed, all students interviewed were able to describe situations where they were given some choice or decision-making responsibility in the lessons. The one exception to this was during the S1 Scottish Country dance lesson. During this lesson, students felt like the teacher made all the decisions and because of this, they found the lesson boring. This is exemplified in the following excerpt: *They choose the music and they choose who you are going with and you don't really get any choice (Amelia).*

(Choice of) Activity-type and gender. One of the main themes that emerged from the primary school students' discussions about choice was the relationship between gender and activity choice. For example, male and female students from CPS thought that the girls had more choice in PE and that the activities that made up the PE curriculum were bias towards girls. During the interview after the second basketball lesson, students agreed that the warm-up activities (a dance and skipping to build up stamina) were more suited to girls than boys. George from CPS, for example, said:

Well like sometimes the, like boys have to do like dancing but they don't really want to and they have to do it. They have to, like, the teacher, like sometimes the teachers expect us to be very like enthusiastic wi' things that we don't, that we don't like.

Students from BPS had similar perceptions, stating after the gymnastics lesson that more choice should be offered so that boys could choose to do activities such as basketball and football and girls could do gymnastics. There seemed to be agreement within this group that some activities are more suited to boys and others to girls and that this fact should influence the activities that they do in PE, for example, James said: *Not all boys really want to do gymnastics.* From the girls' perspective, Poppy stated: *Yes because some girls don't really like doing boyish sports. And the boys don't like doing girly sports. So it is kind of a bit unfair.*

This perception was somewhat reflected in the responses by the S1 boys after their gymnastics class, where one of the boys seemed to prefer the tasks where he could run around freely and appeared embarrassed at being asked to perform more creatively. Iain said: *Doing the fancy stuff, the linking. I feel a bit stupid. It's embarrassing.* The same boys were also very negative about the Scottish Country dance that they experienced, all of them stating that they were embarrassed about dancing in general, but also nervous about dancing *with* girls for fear of being ridiculed by their peers.

Relationships in PE

Choice of partner. Having a choice of partner was cited by all groups as something that was desirable in PE. When students could choose to work with someone who was either a friend, or a similar level of ability, then they recognised that this would impact positively on their learning. This was primarily attributed to being able to help each other and feeling confident to perform without fear of negative evaluation. Students also believed that this was less likely to result the exclusion of a group member or in an argument, stating that getting on with your partner or teammates resulted in more opportunities for learning. For example, the

S2 boys described how working with friends made their experience more fun and that this improves their learning. During the interview after the badminton session, one boy said: *If you get on with people it is going to make you play better because there is nobody to have a go at. You can just concentrate on playing. (Thomas)*

Importantly, some students recognised that working with friends was not always beneficial to their learning. During the BPS golf lesson, students described how they just had a laugh with their friends and did not taking the tasks seriously, as Poppy described: *Well, since I was with my friend in the pairs we were just sitting laughing if I didn't get it over or I got it wrong. So we just sat and laughed.*

Conflict. Discussions around conflict with peers took place with all groups at some stage. For example, after the first observed CPS basketball lesson, students suggested that some of their peers did not fully understand the task or cooperate positively with their team-mates. This either led to lack of involvement by students or to arguments amongst students. Alfie said: *My group did get on quite well at the start but people started sitting out and not listening. Just because they didn't get their way. We just argued and everyone was shouting.*

Conflict and gender. For the primary school students, not getting on with class-mates was related to gender, especially when the activities were more competitive in nature. For example, students from CPS spoke about how the boys and girls did not work well together during the first basketball lesson which resulted in less on-task behaviour, especially for the girls. Isla highlights this by saying: *Em, well people I mostly got on with were the girls because the boys … the boys always start the arguments because they always want to try to win everything.*

Interestingly, not getting on with peers of the opposite gender was not limited to directly competitive activities such as basketball. During the interview after the BPS gymnastics lesson, one of the girls (Olivia) described how she was in a group of boys. She

said that she was bored during this lesson because she did not feel like she could talk to anyone in her group. She said:

Well I was with people who I wouldn't normally muck about with. They were all boys because my partner wanted to go with my other friend… I was bored because I couldn't really talk to anybody.

Discussion

The results from the qualitative data highlighted a number of positive and negative experiences, evidenced by all year groups. Students in this investigation drew attention to the ways in which the level of task difficulty (challenge and achievement), social groupings and the role of gender in making activity choices were important factors in determining the quality of their experiences in PE. These findings will be explored further in the following section, with due consideration of the questionnaire results which demonstrated a slight downward trend of all the variables over the year.

Level of Task Difficulty (Challenge and Achievement)

For the students in each year group, recognising improvements in performance was very important and often this was achieved by engaging in appropriately challenging tasks. When this was not achieved, some students stated that they would persist, whilst others stated that they would become bored or disinterested, as was the case with the S1 girls during the 'Scottish Country dance' lesson. Setting appropriately challenging tasks for all students in a PE lesson is not easy, and this could explain why overall, the students' perception of competence and autonomous motivation decreased over time. Differentiation or appropriate challenge in PE, therefore, is a key factor for teachers to consider in order to create positive learning experiences for *all* of their students (Stidder & Hayes, 2013). It is important for

students to be able to choose to engage in tasks that support and enhance their perceived ability. Supporting this, SDT posits that when learners can have control over what they learn and how they progress, motivation and learning are enhanced (Sanli et al., 2013). In a review that investigated learner choice in the context of motor learning, Sanli et al. (2013) found that when choice was offered, for example choice about the level of task difficulty and rate of progression, motor skill acquisition improved. They claim that choice and control over the learning environment increases learner accountability and this encourages learners to apply more effort to their learning, improving performance and satisfying their sense of challenge.

In the present study, being challenged was an important feature of the students' experiences in PE, and they described situations where appropriate challenge had a positive impact on their motivation and perception of competence. However, there were also instances recalled by students where the tasks set were either too easy or too difficult, and this resulted in a negative affective response and reduced task effort. A major challenge for teachers is to identify, or empower students to identify, an appropriate level of challenge. Sproule and his colleagues (2011) previously reported the importance of providing students in PE with appropriately challenging tasks. In doing so, they advocated student-centred pedagogies, where learners have opportunities for leadership, problem-solving and decision-making. Importantly, engagement in such learning contexts requires the development of social and cognitive skills, and thus implies a broad conception of learning and ability in PE. Student-centred pedagogies, therefore, have greater scope to provide individualised learning experiences that are closely aligned to the abilities and needs of the learner (Sproule et al., 2011). This was the case in a study by Moy, Renshaw and Davids (2015) who examined student-centred pedagogies in the context of athletics. They found that when they adopted pedagogies that gave students choice (about task difficulty and progression) and encouraged

problem solving, then basic needs were satisfied, and self-determination and intrinsic motivation were enhanced. In the present study, there was some evidence from the student interviews that they were provided with opportunities to make choices and decisions. However, there was also evidence of teacher control, lack of choice and inappropriate challenge, and this may go some way to explain why autonomous motivation and perception of competence decreased for all groups over time.

Social Groupings

The quantitative data indicates a reduction in feelings of relatedness for all students, and this was especially the case for primary students. This is interesting because the results from the focus group interviews highlight several instances where primary students did not appear to relate well to each other, especially when boys and girls were grouped together. This was often the case when girls were not grouped with friends, or they felt that the boys were being too competitive. In situations where students have different perspectives about the social context for learning, for example, different perspectives about how boys and girls behave and relate to each other in PE (Murphy, Dionigi & Litchfield, 2014), teachers cannot simply create groups and expect students to get on. Moote, Williams and Sproule (2013) suggest that students need to develop skills for cooperative learning, for example, listening, understanding different perspectives, problem solving and evaluating. Constructing curricula that separates boys from girls may be another way of reducing conflict in the PE context, as perhaps evidenced by the positive perspectives of the S2 boys in this study. However, it could be argued that this limits the (social) learning opportunities for both boys and girls, and further serves to reinforce gender stereo-types in PE. Developing skills for cooperative learning is important therefore, not only because they enhance student-student relationships, learning and wellbeing (Burton, Lydon, D'Alessandro & Koestner, 2006), but also because

they provide a basis from which teachers and students can begin to think critically about PE and challenge the gendered perceptions that influence their views about learning.

Importantly, the focus group interviews also revealed occasions when the students had very positive experiences of working with others in their class. For example, students enjoyed working with peers who had a similar level of performance ability, often because they provided them with an appropriate level of challenge or competition. Perhaps unsurprisingly, this especially appeared to be the case for the all-boys class who enjoyed competition with and against their peers at every opportunity. During the focus group interviews, all year groups discussed working in groups or pairs in relation to notions of feeling confident, positive evaluations, learning and friendship. Friendship in particular played a large part in the students' enjoyment of the lesson, primarily because they felt that they could perform in front of their friends without feeling embarrassed.

Trusting and feeling connected to those around you in PE is important because relatedness is a strong predictor of intrinsic motivation, especially among girls (Gibbons, 2014). Indeed, Cox and Williams (2008) suggest that that feelings of relatedness in PE may be even more important than feelings of competence or autonomy in PE, yet despite this, relatedness has received less attention in the research literature (Gibbons, 2014). Gibbons (2014) calls for further research to be carried out in this area so that teachers might have clearer ideas about ways in which they can create more socially-supportive learning environments in PE. Importantly, this 'call' is set against the backdrop of developing 'gender-inclusive' practices in PE, and practical suggestions are provided to demonstrate how teachers can create learning environments that offer *all* students the opportunity develop positive relationships, with teachers and with each other. Notably, the practical suggestions are applicable to both single-sex and co-educational PE contexts, an important consideration

for those teachers who aim to ensure that boys and girl have equally rich, varied and effective opportunities for learning in PE.

Gender and Activity Choice

One of the key issues that emerged, particularly from discussions with the primary students, was the notion of activity choice in relation to gender. It appears that, even at this stage, students have well-established views about the gendered nature of physical activities in PE, which may also impact on how they understand themselves and others within the PE context (Murphy, Dionigi & Litchfield, 2014). Indeed, Mandigo, Holt, Anderson and Shepherd (2008) remind us that, although boys and girls have the same basic needs, social and cultural factors may mediate how individuals react to the same environment and to each other within the same environment.

During the interviews, the P7 groups alluded to the idea that having a choice of more masculine or feminine activities would be preferred so that they could take part in activities that are more suited to being a boy or being a girl. It did not seem to be the case that this was explicitly about being separated from each other. Rather, it was their view that girls and boys naturally want to do different things and that PE should cater for this. This was also reflected in the S1 interviews after the gymnastics and dance lessons, where the boys seemed to be somewhat embarrassed by having to 'perform' in a particular (perhaps more feminine) way. The idea that boys and girls prefer to take part in different 'types' of activity was also a view that was held implicitly by the secondary school teachers, evidenced in the way that they designed the S2 curriculum. To encourage greater student participation in PE, especially by the girls, the PE department offered a choice of two curricula in S2, one that consisted predominantly of team games and the other of more aesthetic and individual activities. This resulted in single-sex PE for S2 students at this school. Given the S2 boys that were

interviewed all described very positive PE experiences, it is easy to see why the teachers believed this to be an effective strategy. It is important to note, however, the quantitative data demonstrated that autonomous motivation decreased over the school year for all year groups, for both male and female students.

The main rationale for offering two curricula in S2 was to provide students with activities that were perceived to be more meaningful for both boys and girls, increasing their feelings of autonomy, intrinsic forms of motivation and resultantly, engagement in PE. However, offering choice based on a gendered understanding of each activity is highly problematic because it reinforces gendered perceptions in PE and, somewhat paradoxically, it limits the choice for both boys and girls. For example, if girls believe that gymnastics is a feminine activity, then they will be compelled to choose this. Therefore, when offered a choice between a 'masculine' or 'feminine' curriculum, girls have *no choice* but to opt for the more feminine curriculum, a logic that applies equally to boys. This could have a negative impact on perception of autonomy, a necessary condition for the development of intrinsic motivation. Undoubtedly it is important to offer choice in PE, but it is also important to question and challenge these choices, especially when they are based on social inequalities and result in inequitable learning experiences. Understanding basic needs and knowing how to cater for students' basic needs in PE is clearly important to promote learning and wellbeing, however teachers also need to be aware that some of these needs may be socially constructed and may limit learning for individuals or groups.

Summary and Conclusion

Using SDT as a theoretical framework, the results from this investigation demonstrate that the students engaging in their new PE curriculum for the first time had a number of positive experiences facilitated by their teacher. When the tasks were appropriately

challenging, when groupings were successfully organised in terms of ability or friendship, then learning experiences were more positive. However, this investigation also uncovered that, when the tasks were not appropriately challenging and when the students found it difficult to relate to each other in a positive and supportive way, learning experiences were less positive. These findings may, in part, explain why the questionnaire data indicated that this 'new' PE curriculum that aimed to provide a broad range of experiences and outcomes with some degree of autonomy, had little positive impact on their basic need satisfaction and motivation regulation. Furthermore, the gendered perceptions that the students (and possibly the teachers) had about the nature of the tasks and activities in PE, may have limited their feelings of autonomy. For example, male primary students felt like their PE curriculum was bias towards female students. We also speculate that the choice of a 'masculine' or 'feminine' curriculum offered in the secondary context actually limited choice for both male and female students in S2. Consequently, for teachers to provide students with genuine choice, they may have to re-consider the way they organize their curriculum, while at the same time, challenge students' gendered perceptions about the nature and purpose of each curricular activity. Increasing perception of choice (and competence) may also be more likely when student-centred pedagogies that support individualized learning are adopted. These considerations may go some way to ensure that boys and girls in a co-educational setting develop a broad understanding of PE, their place within this context and the positive ways in which they can relate to each other to enhance their learning and their wellbeing.

Clearly the results of this study are somewhat limited given that we did not examine the new curriculum from the perspectives of the teachers, and we were unable to interview more students, more frequently, in particular the S2 girls. However, we argue that understanding how the learning environment is experienced by students remains an important consideration for both teachers and researchers. Furthermore, while SDT is a useful

mechanism by which student motivation can be described and explained, we also propose that more qualitative approaches are necessary to understand the various 'real-life' contexts in which basic needs and motivation are supported or obstructed. Importantly, this research may also reveal the social and cultural factors that influence student motivation in PE. This information is important for the development of informed and effective pedagogy that supports student learning, health and wellbeing.

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Table 1

Post lesson interview activities

Class	Post-Lesson interviews			
AHS S1	Gymnastics	Scottish County dance	Badminton	
AHS S2	Football	Fitness	Rugby	Badminton
BPS P7	Tennis	Gymnastics	Golf	
CPS P7	Basketball (1)	Basketball (2)	Gymnastics	

Table 2.

Means and Standard Deviations of the Main Variables (Pre- and Post-measures) by Gender and Level.

	Gender				Level			
	Male		Female		Primary		Secondary	
Variables	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Autonomy (Pre)	3.29	.91	2.81	.82	3.11	.99	3.07	.86
Autonomy (Post)	3.18	.91	2.80	.86	2.90	.88	3.06	.91
Competence (Pre)	3.38	.96	2.81	.90	3.09	1.13	3.15	.91
Competence (Post)	3.22	.89	2.69	.87	2.89	.96	3.04	.90
Relatedness (Pre)	3.71	.91	3.44	.92	3.63	.99	3.58	.89
Relatedness (Post)	3.60	.89	3.38	.94	3.34	.95	3.57	.89
Autonomous Motivation (Pre)	3.70	.92	3.27	.87	3.63	.95	3.46	.90
Autonomous Motivation (Post)	3.50	.84	3.10	.81	3.19	.95	3.38	.79
Controlled Motivation (Pre)	3.06	.95	2.71	.85	3.96	.96	2.89	.90
Controlled Motivation (Post)	3.05	.99	2.88	.94	2.66	.91	2.98	.94