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Physical education preservice teachers' physical activity habits and perceptions of the profession and subject: development during teacher education

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Abstract

Teachers' perceptions of the subject and the teacher profession are embodied during the socialization process of becoming a physical education (PE) teacher and through participation in different social fields. The initial acculturation phase of the socialization has been shown to be of utmost importance for the development of these perceptions; however, research on the impact of PE teacher education (PETE) on preservice teachers' (PSTs') perceptions and beliefs has yielded mixed results. The purpose of this study was to explore if PSTs' physical activity habits and perceptions related to the subject and profession develop between enrolment in and graduation from PETE. The study used web-based questionnaires with closed- and open-ended questions completed by 60 students in a Swedish PETE programme. The open-ended questions were subject to content analysis in three steps before comparisons, and we performed statistical analysis with an independent t-test, chi-square tests, and Fischer's exact test. The results show that PE PSTs are a homogenous group of students, with vast experience of sports and physical activities both during enrolment and at graduation. Furthermore, although PSTs' perceptions of a good PE teacher were unchanged during PETE, their perceptions of a good PE lesson did develop. The lack of development of PSTs' perceptions of a good PE teacher could be explained by their initial perceptions of this question being suitable at enrolment and simultaneously well-grounded in their habitus; the development of their perceptions of a good PE lesson could be understood in relation to the elements during PETE that offer PSTs opportunities to apply learned skills and knowledge in real-life situations.

Keywords: habitus, professional socialization, PETE, subjective warrant, Sweden

Introduction

The teaching and content experienced by pupils during lessons in physical education (PE) are central to their experience of the subject (Dagkas & Stathi, 2007) and affect their opportunities to acquire knowledge and develop competencies necessary to be physically active from a lifelong perspective (Åström, 2013; Swedish Schools Inspectorate, 2018).

Teachers' perceptions of the subject and the teaching profession have been found to influence their choices of lesson content (Ferry & McCaughtry, 2013; Merrem & Curtner-Smith, 2019; Templin & Schempp, 1989). These perceptions are developed and embodied during the socialization process of becoming a PE teacher (Brown, 2005; Larsson, 2009; Levin & He, 2008; Templin & Richards, 2014) through participation in different social fields (Lortie, 1975).

Competitive sports and other kinds of physical activities have been shown to be important social fields among PE teachers (cf. Brown et al., 2017), and researchers have demonstrated participation in these to greatly influence teachers' perceptions of the PE subject (cf. Croston & Hills, 2017; Curtner-Smith, 2017; Flemons, 2017; Green, 2003; Larsson et al., 2018), teachers' personal rationale for selecting lesson content (Ferry & McCaughtry, 2013), and the development of what is labelled a subjective warrant (Lawson, 1983; Lortie, 1975).

The subjective warrant is developed during years of socialization and influences a person's perception of PE and PE teachers (Lawson, 1983), works as a filter of new impressions, resembles Bourdieu's (1990) term *habitus* (Green, 2003), and is described by Lawson (1983) in two main types: a coaching and a teaching orientation. Those with a coaching orientation are mainly attracted to work as PE teachers to become coaches, work within extracurricular sports, and see teaching PE as a career contingency, whereas those with a teaching orientation are more interested in teaching PE and see coaching as a career contingency (Lawson, 1983). Preservice teachers' (PSTs') sex and experiences of sports and physical activities have been shown to influence the development of these orientations, with men or those experienced in high-level sports developing a coaching orientation and women or those who have participated in nontraditional and noncompetitive sports developing a teaching orientation (cf. Curtner-Smith et al., 2008; Merrem & Curtner-Smith, 2019).

Although sport and physical activity patterns generally differ between Swedish women and men in relation to both the type of activity and the setting, with a larger proportion of men practicing in larger-team sports and sports club settings and a larger proportion of women participating in sport and physical activities in nontraditional settings (Fahlén & Ferry, 2019), no study has shown that the orientations differ between male and female PSTs in Sweden. Nor has any study to our knowledge shown that the typical orientations towards PE found in many other studies exist among Swedish or Scandinavian PSTs. The lack of different orientations might be explained by the clear separation between PE in school and competitive sports in sport clubs during leisure time, which follows the traditional organization of sports in Scandinavian countries (cf. Ferry et al., 2013), resulting in the limited presence of competitive sports in school and thus the seeming implausibility of coaching as a career path in school.

The socialization of teachers is generally described in three phases: acculturation, professional socialization, and organizational socialization (Lawson, 1983). The initial acculturation phase has been shown to be of utmost importance for the PE teachers' perceptions (cf. Zeichner & Gore, 1990); however, though it is seen as the weakest phase of the socialization process (cf. Curtner-Smith et al., 2008; Templin & Richards, 2014), there is no consensus in research on the impact of PE teacher education (PETE) on PSTs' perceptions of the subject and profession. Following this, Richards et al. (2018) called for more research to focus on the changes in PSTs' perceptions and beliefs with a longitudinal approach, following PSTs through PETE and into their teaching positions.

Partially answering this call, however cross-sectional, and influenced by occupational socialization theory in combination with Bourdieu's concept of habitus, we had the objective in this study to investigate the development of PSTs' perceptions of a good PE teacher and PE lesson from enrolment at to graduation from PETE—that is, during the professional socialization phase of PETE—and whether this development differs between women and men. In addition, because experiences of sports and physical activities have been found to be influential for PSTs' perceptions and behaviors (cf. Dowling, 2011; Romar & Frisk, 2017) and because participation patterns differ between women and men (Fahlén & Ferry, 2019), this study also examines how PSTs' physical activity habits develop during PETE.

PETE in Sweden

Following international acculturation research on PSTs' backgrounds and experiences (cf. Green, 2003), studies on Swedish PSTs enrolled in PETE have shown that they are a homogenous group of students with similar backgrounds (Larsson, 2009). In general, they are men, have extensive experience of competitive sports (mainly team sports) and physical activities, and have enjoyed PE in school. In addition, they have been shown to have similar perceptions of PE and their future PE teaching professions at enrollment (Ferry, 2018)

PETE for upper secondary school teachers in Sweden is regulated by the Higher Education Act and Higher Education Ordinance (SCHE, 2018), which states the subject areas and number of courses the programme should contain (Backman & Larsson, 2016). The programme lasts 5 to 5,5 years, depending on the subject (300-330 European Credit Transfer System [ECTS]), during which PSTs complete two school subjects (90-120 ECTS each), general education courses (90 ECTS), sequential practicums, and a final research project (Romar et al., 2018). The exact content addressed in each course and the sequence in which courses must be taken are locally determined by the education institutions.

To get a sense of the theoretical orientations within Swedish PETE and the PE subject matter covered during it, Backman and Larsson (2016) reviewed learning outcomes of PETE programmes in Sweden and found that the orientations were mainly behavioristic (the purpose of PETE being to prepare technically skilled teachers) and traditional or craftones (the purpose of PETE being to prepare teachers for the current system). Furthermore, they found eight main subject matter areas that can be said to represent what a Swedish PE teacher must know upon programme completion: pedagogy (knowledge of pedagogy, education, etc.), science (psychology, anatomy, nutrition, etc.), PE teaching (skills, competence, etc.), physical movement skills (ability to demonstrate exemplary actions, etc.), critical social inquiry (social class, ethnicity, gender, etc.), interpretation of curricula documents (local interpretation of national curriculum, assessment, etc.), mental and social health (social perspectives, self-esteem, etc.), and research methods (hands-on knowledge of different methods, etc.). This summary gives a fair picture of the theoretical orientation and the areas treated in the local PETE programme in this study.

Specifically for the area of physical movement skills and in spite of Swedish PETE that originated from the Swedish gymnastics tradition, previous research has shown that PETE in Sweden builds on a long tradition of focusing on physical skills in various sports activities (Larsson, 2009). Competitive team sports have, however, been found to dominate the activities in schools (Swedish Schools Inspectorate, 2018).

Theoretical Framework

This study will draw on the occupational socialization theory as its theoretical framework. In addition, we are using Bourdieu's concept of habitus as a "thinking tool" to examine the findings (Flemons, 2018, p. 284), providing an additional means to understand how teachers' perceptions and behaviors are embodied (Croston & Hills, 2017) and help us understand teachers' personal rationales (Ferry & McCaughy, 2013).

Occupational Socialization Theory

According to the occupational socialization theory, the socialization of teachers is generally described in three phases: acculturation, professional socialization, and organizational socialization (Lawson, 1983; Richards et al., 2019; Templin & Schempp, 1989). During these phases, teachers develop a subjective warrant (Lawson, 1983; Lortie, 1975) or embody, in Bourdieu's (1990) terms, a habitus, which has implications for their perceptions and expectations of what it means to work as a teacher (Brown et al., 2017; Green, 2003; Larsson et al., 2018). Beyond the initial three phases of socialization, Lee and Curtner-Smith (2011) identified two additional phases: the secondary professional socialization (the transition into the role of a doctoral student) and the secondary organizational socialization (the career as a PETE faculty member). We recognize the importance and impact of these socialization forms on the beliefs and experiences; however, due to our focus on development during PETE, we do not address all these phases in detail.

According to McCullick et al. (2012), the occupational socialization theory is useful because it allows "researchers to consider how prior familial and educational experiences inform majors' beliefs and conceptions of teaching PE and the possible implications on teacher education programs" (p. 180). This knowledge has been suggested as important for the PE profession and can, if considered, have an impact on the design and outcome of PETE programmes (cf. Dowling, 2011; Pike & Fletcher, 2014; Richards et al., 2018). In the following section, we describe the three initial phases of the socialization with thorough detailing of the professional phase, which this study examines.

Acculturation leads to the decision to pursue teacher education (cf. Lawson, 1983). During this phase, based on early experiences and influence from significant others, PSTs' understanding of what being a good PE teacher means is established (cf. Green, 2003; Larsson et al., 2018). During acculturation, they develop an understanding of what it takes to be a teacher and enter teacher education with strong perceptions of the qualities they believe are most important for good teachers. From Ferry and McCaughtry's (2013) research, PE teachers during this phase develop strong emotional ties with sports in something that resembles a 'love affair'. This is an important phase in the socialization and development of PE teachers and influences the shaping of future teachers' perceptions (Flemons, 2017; Pike & Fletcher, 2014; Richards et al., 2014). These perceptions become embodied in the habitus of PSTs (Larsson, 2009), and because the habitus is long-lasting and resistant (but not impossible) to change (cf. Brown, 2005), it influences teachers' perceptions of the purposes of education and the teaching profession (Richards et al., 2014; Templin & Schempp, 1989).

Professional socialization begins when PSTs enrol in a teacher education programme (Lawson, 1983). During this phase, PSTs learn the important knowledge and skills demanded by the profession of PE teaching (cf. Richards et al., 2014, 2018; Sirna et al., 2010). By PSTs' continued involvement in sports (cf. Larsson, 2009) and due to like-minded peers who surround them (Adamakis & Zounhia, 2016), experiences during this phase contribute to PSTs' beliefs about curricula; many times, their initial perceptions of PE are reinforced (Mordal-Moen & Green, 2014), as well as their love of sports and decision to make PE teaching their career (Ferry & McCaughtry, 2013). Especially important for the development of perceptions and beliefs during PETE seems to be the practicum, during which PSTs get the opportunity to apply learned skills in real-life situations (Adamakis & Zounhia, 2016; Mordal-Moen & Green, 2014) and which has the potential to challenge or reinforce PSTs' beliefs (McEntyre et al., 2018). Research on the impact of professional socialization on PSTs' beliefs and perceptions regarding the subject and profession remains inconclusive, though. Most studies have indicated that PETE has a limited effect, if any (cf. Adamakis & Zounhia, 2016; Green, 2003; Mordal-Moen & Green, 2014; Zeichner & Gore, 1990); PSTs' embodied beliefs (i.e., habitus) instead are unchanged (Brown, 2005; Graber, 1996) or reinforced. Other studies, on the other hand, have found that PETE under certain circumstances can successfully challenge and influence PSTs' initial beliefs (cf. Hyndman, 2014; Richards et al., 2014). For PETE to be effective and facilitate this development, researchers have recommended that the programs include a technical culture shared among the faculty members (i.e., the skills and knowledge essential for PE teachers), be designed to engage PSTs as members of a learning community (Curtner-Smith et al., 2008; Merrem & Curtner-Smith, 2019; Richards et al., 2013), and give PSTs opportunities to reflect on their experiences and initial beliefs and perceptions (cf. Ferry, 2018; Merrem & Curtner-Smith, 2019; Richards et al., 2018).

Organizational socialization begins when PSTs enter the workplace as teachers. This phase is ongoing throughout teachers' careers and impacts their development in that role and their teaching (Richards et al., 2014). During this phase, teachers encounter the requirements of the profession, and there is a risk of the lessons learned during PETE being washed out (cf. Richards et al., 2014). Specifically, in relation to the choice of teaching content, the embodied habitus of teachers has been shown to influence that choice (Bourdieu, 1990), and the activities teachers choose for their PE classes have been shown to originate from their own sports backgrounds (Ferry & McCaughtry, 2013; Lundvall & Meckbach, 2004; Romar & Frisk, 2017).

As noted by Richards et al. (2019) and Templin and Schempp (1989), among others, occupational socialization is a dialectical process, meaning that individuals have an active role in the socialization and might resist what is imposed on them. Or, as Adamakis and Zounhia (2016), Levin and He (2008), and Romar et al. (2018) expressed, PSTs filter new experiences during PETE through their previous perceptions, also expressed as their habitus or subjective warrant.

Habitus

Bourdieu (1990) defined the habitus as “systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures” (p. 53), which can resemble a kind of internal compass that affects the conscious and unconscious ways in which an individual acts and thinks (Larsson, 2009). The habitus, similarly to the subjective warrant, works as a filter through which new experience and knowledge are rejected or accepted depending on how they fit the embodied dispositions PSTs have previously acquired (Green, 2003).

By participation in different social fields, certain dispositions and habitus are embodied (Brown, 2005), and PSTs’ own experiences of sports, physical activities, and PE have especially been shown to have a long-lasting influence on the habitus formed (Croston & Hills, 2017; Green, 2003; Larsson et al., 2018). Brown (2005) stated that PSTs enter PETE with their habitus already internalized and formed, and the long-lasting influences of the habitus are embodied by the PE teacher. Researchers have put this embodied habitus forward as one reason why teaching in PE still revolves around mainstream sports (Brown et al., 2017). Furthermore, Green (2003) argued that the habitus is strongly connected to teachers’ views on the nature and purpose of PE and to influences on teachers’ practice.

Contribution to the Field of Occupational Socialization Theory

Researchers have concluded that most previous studies on occupational socialization among PE teachers have been qualitative, lacking a longitudinal perspective (Adamakis & Zounhia, 2016; Pike & Fletcher, 2014). In addition, with a focus on the organizational phase conducted in the United States (Richards et al., 2019), few studies have been conducted in European countries (Merrem & Curtner-Smith, 2019). As Mordal-Moen and Green (2014) pointed out, there exist few occupational socialization studies from a Scandinavian perspective, and to our knowledge, beyond studies focused on newly enrolled PSTs’ background and perceptions of PE and the profession (Ferry, 2018; Larsson, 2009; Larsson et al., 2018) as well as Backman et al.’s (2020) study on PSTs’ conceptions of teaching and assessment of movement capability, no research has focused on the actual professional socialization among Swedish PSTs.

In addition to its usefulness for Swedish PETE programs, we believe this study can contribute to the research field with new knowledge through quantitative research on PSTs’ actual development of physical activity habits and perceptions during PETE, encompassing differences and similarities in this development between male and female PSTs. Moreover, this study can contribute with a widened perspective, additional use of the habitus concept, and a focus on PETE given in Scandinavian countries with a distinct sports model (Ferry et al., 2013) in that the typical teacher/coach orientations don’t seem to exist.

Purpose of the Study

The purpose of this study was to explore if PSTs’ physical activity habits and perceptions related to the subject and profession develop between enrollment in and graduation from PETE and if there are any differences between women and men in such development. We specifically intended to answer whether there was any development in relation to:

- involvement in sports and physical activities,
- perceptions of a good PE teacher, or
- perceptions of a good PE lesson.

Method

This study is part of a larger follow-up research project that addresses sports students in one department at a major university in Sweden using a web-based questionnaire completed at enrolment and graduation. This specific study focuses on PETE programme students’ answers to both questionnaires at the start (2005–2014) and end of the programme (2010–2019).

Setting

When PSTs in this study were enrolled (2005–2014), the structure of the PETE programme at the large Swedish university in this study consisted of a 5-year programme (see Figure 1). During the programme, PSTs have three semesters of PE subject matter studies, with a focus on different subject knowledge areas related to PE (nutrition, physiology, sports history, etc.), PE content knowledge (tactics, rules, and individual skills in different sports and physical activities, etc.), and pedagogical content knowledge and PE teaching (curriculum, methodology, didactics, on-campus teaching assignments, etc.); two semesters of general education courses focused on the teaching profession (together with PSTs from other subject orientations); three semesters of subject matter courses in their second subject; and a practicum for a full semester. They finish by writing a final research project (for a further description of the PETE structure, see Ferry, 2018; Romar et al., 2018). The theoretical orientations underlying the program are a combination of behavioristic and traditional or craft orientations (see Backman & Larsson, 2016). After completion of the program, the PSTs receive a master’s of science degree in education.

PE subject matter studies Three semesters (90 ECTS)	Subject knowledge (nutrition, physiology, sports history, etc.) Content knowledge (tactics, rules, individual skills, etc.) Pedagogical content knowledge and PE teaching (curriculum, methodology, didactics, on-campus teaching assignments, etc.)
General education courses Two semesters (60 ECTS)	Focus on the teaching profession (school law, general grading and assessment, etc.)
Second subject matter studies Three semesters (90 ECTS)	Mathematics, biology, history, etc.
Practicum One semester (30 ECTS)	At local schools
Final research project One semester (30 ECTS)	With a focus on PE in school

Note. ECTS = European Credit Transfer System.

Figure 1: Structure of the PETE programme.

Participants

Sixty PSTs (21 women, 39 men) responded to the questionnaires at enrolment and graduation (29% response rate), enabling analysis on individual development during PETE (see Table 1). The mean age of the PSTs at enrolment was 22.1 years ($SD = 2.75$), with no significant difference ($p < 0.5$) between the women ($m = 22.4$, $SD = 3.56$) and men ($m = 22.0$, $SD = 2.42$).

Table 1: Numbers and Response Rates (RRs) of Students Answering the Questionnaires at Enrollment and Graduation

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Sum
Enrolment	34	22	29	18	34	17	8	15	20	9	206
RR (%)^a	87	58	71	58	81	41	38	44	67	32	60
Graduation	15	8	3	3	6	5	4	6	6	4	60
RR (%)^b	44	36	10	17	18	29	50	40	30	44	29

^a Calculated as the number of PSTs enrolled in the first PE subject matter course. ^b Calculated as the number of PSTs who answered the questionnaire at enrolment.

Data collection

The questionnaires were not part of a graded assignment and began with information about the aim of the study and how the information provided would be used. Before answering the questions, all participants provided their consent to participate in the research project.

Students answered the enrolment questionnaire during the first weeks of their first PE subject matter courses and the follow-up questionnaire during the last weeks of the final semester when they were writing their final research projects.

The questionnaire used at enrolment was developed and tested in a pilot study carried out in 2004 with sports students at the local university and finalized thereafter. The questionnaire addresses topics such as the students' backgrounds, experiences with sports and physical activities, and perceptions and beliefs regarding PE and youth sports (cf. Ferry, 2018; Söderström et al., 2018); it largely consists of questions used earlier in evaluations by the Swedish Schools Inspectorate and Swedish researchers. The follow-up questionnaire used at graduation was developed in 2009 on the basis of findings from the enrolment questionnaire and addresses the same topics through similar questions. From the larger questionnaires, this study utilized some of the closed, yes/no answer background questions related to the PSTs' current and past sports and physical activity habits. In addition, this study included two open-ended questions from the questionnaires that highlighted the PSTs' perceptions of PE and their future profession: the PSTs were asked to describe three characteristics of a good PE teacher and of a good PE lesson. The two open-ended questions resembled ones used in Arnon and Reichel's (2007) study on the ideal teacher, which the researchers in the pilot study found usable and valid for describing the PSTs' perceptions. These questions have been used in research on newly enrolled PSTs' perceptions (Ferry, 2018).

Data Analysis

The answers to the open-ended questions at enrolment were subjected to content analysis, following three steps, before comparisons between women and men were made and statistical calculations. In the first step, the first author thoroughly read all the answers—which were usually given in the form of short sentences or

single words—numerous times to find regularities and recurring themes and to form an opinion of the material (Miles & Huberman, 1994). This process is described by Stake (1995) as intuitive and requires the researcher to determine what information is linked together to ascertain what regularities in the information could be used to form categories, and then after the categories are created, to fill them with content. During the second step, the categories were either merged to make their meaning somewhat broader or clarified to narrow their meaning (Miles & Huberman, 1994). The main purpose of this process was to make the categories independent of each other, exhaustive, and sharply different. In total, seven categories, each with a definition of its meaning and examples of its content, were created for each of the two questions during this step (see Table 2). In the third step, the categories were related to the existing research on PETE and PSTs (cf. Dowling, 2011; Larsson, 2009).

Table 2: Categories for the Two Open-Ended Questions

Characteristics of a good PE teacher, examples of content	
Considerate, social competence	empathic, see and listen to all pupils, easy to talk to, good social ability, sympathetic, sincere, flexible, etc.
Pedagogical competence	ability to explain to everyone, didactical skills, clear instructions, etc.
Subject knowledge	theoretical and practical knowledge, a good education, etc.
Motivator	engage pupils, motivate all pupils, create interest in PE, etc.
Passionate about PE	committed to PE and sports, motivated about the subject, etc.
Role model	set an example, 'practice what you preach,' be a role model, etc.
Other characteristics	interesting, fun, kind, fair, strict, charismatic, inventive, etc.
Characteristics of a good PE lesson, examples of content	
Fun, inspiring, creative	fun, inspiring, playful, motivating, joy of movement, creative, etc.
Consists of physical activities	physical activities in focus, physically demanding, provides exercise, different specified activities, etc.
Develops pupils' skills	develops pupils, provides knowledge, informative, etc.
Well-planned	well-planned, structured, clear goals, without fail, etc.
Adapted to all	adapted to all pupils, challenging for all, enables participation, etc.
Theory, discussion, reflection	theoretical content, reflections, discussions, etc.
Varying content	varying content, both practical and theoretical content, involves different sports, etc.

To compare between enrolment and graduation for the open-ended questions, the answers at graduation were deductively categorized as based on the categories and definitions generated from the answers during enrolment. To ensure credibility and trustworthiness in the generated categories, the two authors independently categorized a subset of the answers and discussed the outcome (Miles & Huberman, 1994). Initially, the authors had 84% intercoder reliability on the question about the characteristics of a good PE teacher and 93% intercoder reliability on the question about the characteristics of a good PE lesson. After discussions, all discrepancies were resolved collaboratively.

The data were statistically analysed using IBM SPSS Statistics version 26.0 and Microsoft Excel 2016. The statistical analysis of the differences in mean age between men and women were calculated and analysed with independent t-tests and Cohen's d (d) to measure effect sizes (Lakens, 2013). The differences in frequencies between enrolment and graduation for the open-ended questions about the characteristics of a good PE teacher and a good PE lesson were analysed using chi-square tests with Cramér's V (w) as an effect size measurement. The differences in proportions on binary variables (e.g. the differences in membership and physical activity engagement between enrolment and graduation) were analysed using Fisher's exact test and the Phi coefficient (Φ) as an effect size measurement (Cohen, 1988).

Findings

First we present the PSTs in this study and their involvement in the important and influential social fields of physical activities and sports (Green, 2003). Following these main findings, we present the development of PSTs' perceptions of a good PE teacher and PE lesson and then discuss these findings in relation to previous research in the field.

PSTs in the Study

Similar to previous research on Scandinavian PETE recruits (Dowling, 2011; Larsson, 2009) as well as international ones (cf. McCullick et al., 2012), a larger proportion of the students recruited to the PETE programme in this study were men (65%).

The 60 PSTs who answered both questionnaires at enrolment and graduation (21 women, 39 men), had similar backgrounds, with vast participation experience in different sports, many in a competitive setting, and other physical activities. Almost all PSTs (97%) had been members of a sports club during their upbringing and a majority (67%) were members at enrolment (see Table 3).

Most of the PSTs had participated in competitive sports as adolescents and at enrolment about half participated in team sports (55%), individual sports (48%), and recreational sports (53%). In addition, over 80 %

of all PSTs had regularly exercised at a sports centre or gym, and almost 70% had regularly engaged in weight/strength training at enrolment.

Table 3: Sport and Physical Activity Patterns at Enrolment and Graduation (women = 21, men = 39), proportions

	At enrolment			At graduation		
	Women	Men	Total	Women	Men	Total
Members of a sports club (%) ^a	52	74	67	38	72	60
Participants in team sports (%) ^{ab c}	38	64	55	10	44	32
Participants in individual sports (%)	33	56	48	38	59	52
Participants in recreational sports (%)	71	44	53	71	54	60
Regularly exercising at a sports centre/gym (%)	86	87	87	71	79	76
Regularly engaging in weight/strength training (%)	71	64	67	62	74	70

^a $p < .05$ between women and men at graduation

^b $p < .05$ between enrolment and graduation for women

^c $p < .05$ between enrolment and graduation in total

There were few differences in relation to participation patterns among women and men. The only statistically significant differences found was in relation to membership in a sports club at graduation, where 72% of the men were members and 38% of the women were members ($p < .05$, $\Phi = .33$), and in relation to participation in team sports at graduation, where 44% of the men and 10% of the women participated ($p < .05$, $\Phi = .35$). There was also a tendency for difference at enrolment in participation in team sports (women 38% and men 64%, $p = .063$, $\Phi = .25$) and participation in recreational sports (women 71% and men 44%, $p = .058$, $\Phi = .27$).

In relation to the development of the students' physical activity patterns during PETE, there was no statistical significant difference in the proportion of PSTs who were members of a sports club at graduation compared to enrolment in total, and for women and men, respectively ($p > .05$). No significant differences existed either in participation in individual sports or recreational sports, exercising at a sports centre, or engaging in weight/strength training ($p > .05$). The only significant difference found was that the proportion of participants in team sports were significantly lower at graduation among the women (10%) compared to at enrolment (38%, $p < .05$, $\Phi = .35$), and in total (32% vs. 55%, $p < .05$, $\Phi = .24$). No difference in participation in team sports was found among the men ($p > .05$) and in total 52% were still participating in individual sports and 60% in recreational sports at graduation.

Analogous with previous findings on PE recruits' background (cf. Flemons, 2017; Green, 2003; Larsson, 2009; Lundvall & Meckbach, 2004; McCullick et al., 2012; Pike & Fletcher, 2014; Richards et al., 2019), the results reveal a homogenous group of students with vast experiences of sports and physical activities at enrolment. Furthermore, the results indicated that during PETE, PSTs continued their participation in sports, thereby further strengthening what Ferry and McCaughtry (2013) call their emotional connection to sports. These emotions can be seen as one expression of the habitus PSTs embody, which has implications on their perceptions and expectations about their future profession (cf. Green, 2003; Pike & Fletcher, 2014; Richards et al., 2014), and can also have a powerful role in how PSTs will make instructional, content, and curricular decisions when working as teachers (Croston & Hills, 2017; Ferry & McCaughtry, 2013; Merrem & Curtner-Smith, 2019).

However, there were some differences between women's and men's experiences. A larger proportion of the male PSTs were still members in sports clubs (72%) and team sports (44%) at graduation in comparison with female PSTs who engaged in sport clubs (38%) in a lesser degree, participated in recreational sports (71%) in a higher degree, and exercised at a sports centre (71%). In sum, a majority of the PSTs had experience in competitive sports, and following Lundvall and Meckbach's (2004) argumentation, this could result in the PSTs' future PE lessons to be dominated by team sports and ball games, since those are the activities teachers have experience in and believe they can master. In the future, and especially among the male PSTs, this may further reinforce the focus on competitive sports during PE lessons (Swedish Schools Inspectorate, 2018), and thus negatively affect Swedish pupils' opportunities to acquire knowledge and develop competencies necessary to be physically active in a lifelong perspective (cf. Ferry & McCaughtry, 2013).

Perceptions of a Good PE Teacher

When we examined the development of characteristics for a good PE teacher (see figure 2), the analysis revealed no significant difference in how common these characteristics were at enrolment and graduation ($p > .05$), indicating there was no development in the perception of a good PE teacher during PETE. No significant difference existed between men and women during enrolment or graduation ($p > .05$). For both occasions, the highest proportion of PSTs indicated that a good PE teacher should be considerate and have social competence (29% vs. 27%), have pedagogical competence (19% vs. 22%), possess subject knowledge (both 17%), and be a motivator (17% vs. 16%).

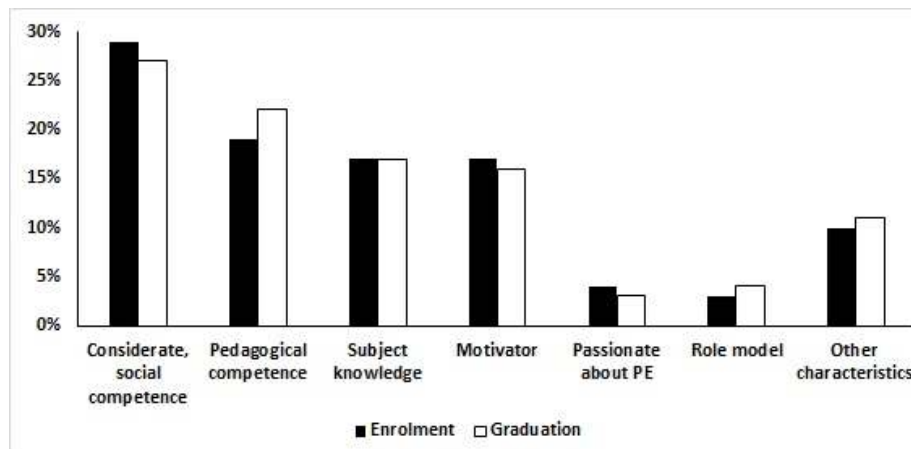


Figure 2: Characteristics of a Good PE teacher at Enrolment and Graduation (women = 21, men = 39), proportion of all answers (%).

The three characteristics with the highest proportions were previously shown to apply to newly enrolled PE PSTs in Sweden (Ferry, 2018), but not in Pike and Fletcher's (2014) review of previous studies in the area, where important aspects were being passionate about PE, being a role model, and other mentioned characteristics. Why these three characteristics are valued more highly by the PSTs in our study compared to earlier studies is not obvious. However, the high proportion of answers belonging to the pedagogical competence and subject knowledge categories coincide with Dowling's (2011) and Mordal-Moen and Green's (2014) results on Norwegian PSTs, Arnon and Reichel's (2007) study on teacher-students' view on the ideal teacher, and Merrem and Curtner-Smith's (2017) results on German PSTs' view of effective PE teachers. These characteristics are also described by Francesco et al. (2019) as competencies effective PE teachers have. The high proportion of PSTs mentioning that a good PE teacher should be considerate and have social competence have also been shown to apply to teacher-students' view on the ideal teacher in general (Arnon & Reichel, 2007), German PSTs' characteristics of effective PE teachers (Merrem & Curtner-Smith, 2017) and are a part of the character held by effective teachers (Francesco et al., 2019). However, to fully understand how this relates to these PE teachers specifically is not as easy to explain and needs further investigation.

The results presented provide information on the PSTs' perceptions of their future profession (cf. Dowling, 2011) and show that there was no significant difference in relation to characteristics of a good PE teacher between enrolment and graduation. With exception of being passionate about PE, most of the characteristics were not specific to PE teachers, but instead applied to the development of a character suitable for teachers in general. This was especially noticeable in the high proportions of PSTs who indicated that a good PE teacher should be considerate and have social competence, which Arnon and Reichel (2007) and Fajet et al. (2005) also noted, and that affective teacher qualities were more important than professional competence among PSTs in general. Simultaneously, we could conclude that PSTs' perceptions of a good PE teacher seem to be valid and suitable at enrolment; be considerate, have social and pedagogical competence, subject knowledge, and be a motivator. These perceptions may not have developed simply because there was no need for change during PETE.

The lack of development during PETE can also be understood in relation to the PSTs' habitus embodied through their acculturation. By participating in different sports and physical activities during the acculturation phase, which is an important phase in shaping future teachers' perspectives (cf. Pike & Fletcher, 2014; Richards et al., 2014) and has a strong impact on their approach to teaching (Zeichner & Gore, 1990), the PSTs embodied certain perceptions as a part of their habitus (Flemon, 2017). Additionally, because habitus is resistant to change (cf. Brown, 2005; Croston & Hills, 2017) and because during PETE the PSTs continue their involvement in sports and are surrounded by like-minded peers and PETE faculty members (cf. Adamakis & Zounhia, 2016), and thus have similar habitus (Larsson, 2009), their initial perceptions instead might have been further reinforced during professional socialization. Similar to Adamakis and Zounhia's (2016) and Mordal-Moen and Green's (2014) results, our results indicated that PETE has not challenged or developed the PSTs' perceptions of a good PE teacher. However, as already stated, the PST perceptions at enrollment can be viewed as suitable and there was no actual need for development during PETE.

Perceptions of a Good PE Lesson

Analysing the development of a good PE lesson's characteristics (see figure 3) showed a significant difference between enrolment and graduation for the PSTs ($p < .05$, $\chi^2 = 26.07$, $w = .289$),¹ indicating perceptions developed during PETE.

At enrolment, the most common categories for a good PE lesson were that it should be fun, inspiring, and creative (29%); consist of physical activity (22%); and develop pupils' skills (13%). At graduation, the most

¹ Due to small numbers, analysis was not possible for women or men respectively on this question.

common categories were instead that it should be well-planned (29%), consist of physical activities (20%), and develop pupils' skills (17%). No significant difference existed between men and women during enrolment or graduation ($p > .05$).²

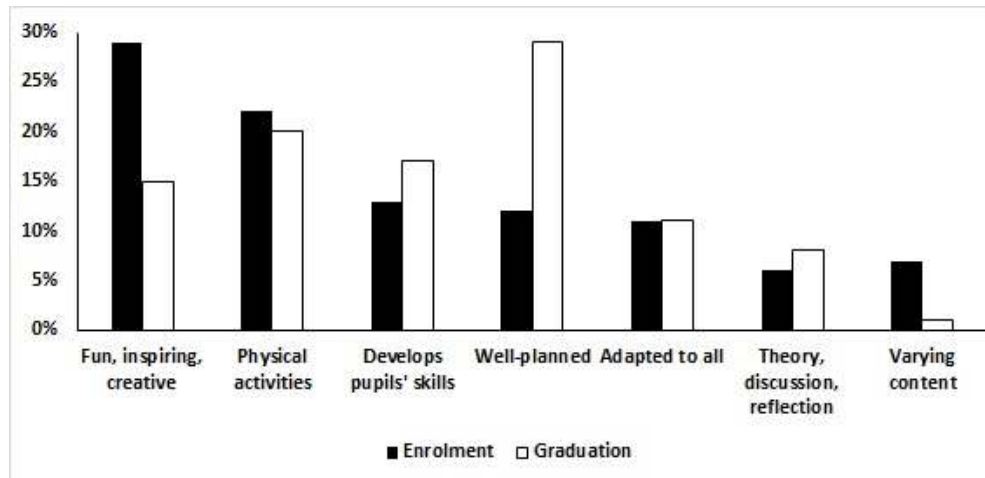


Figure 3: Characteristics of a Good PE Lesson at Enrolment and Graduation (women = 18, men = 35), proportion of all answers (%).

The significantly higher proportion of answers indicating that a good PE lesson should be well-planned could be explained by how the PSTs' experiences and knowledge in teaching pupils increased during PETE through the full semester of practicum and teaching assignments during the PE subject matter courses. Through these PETE elements, the PSTs had the opportunity to apply learned skills in real-life situations, which is especially important for developing perceptions (cf. Richards et al., 2013). In line with this McEntyre et al. (2018) argue that subject matter courses have potential to challenge PSTs' beliefs, while Romar and Ferry (2020) noted the influence from a method course on PSTs' development of practical knowledge.

The higher proportion of PSTs who indicated that a good PE lesson should develop pupils' skills at graduation compared to enrolment, could be explained by it being explicitly stated in the PE curriculum in Sweden and thus being a topic that has been in focus during PETE. In addition, this topic has also been addressed during the general education course and thus may have influenced the PSTs' perceptions.

The significantly lower proportion of PSTs at graduation answering that a good PE lesson should be fun, inspiring, and creative is not obvious to understand, considering earlier presented results on PSTs' experience in sports and physical activity (Table 3). In fact, previous studies showed that many PE teachers wanted their pupils to experience the joy of sports that they had experienced (cf. Ferry & McCaughtry, 2013; Green, 2003; Lundvall & Meckbach, 2004). This result is also not obvious in relation to a somewhat large proportion of the PSTs who indicated that a good PE teacher should be a motivator. One possible explanation could be that the PSTs were influenced by the discussion that has been going on for several years in Sweden, where the subject has evolved from being a practical subject in which the pupils should have fun to being a traditional knowledge subject (Larsson et al., 2018). In addition, having fun might have been a central perspective during their acculturation phase and is not in itself an issue anymore after professional socialization, where student learning and planning are in focus.

In sum, unlike most other studies (cf. Adamakis & Zounhia, 2016), but also supporting the work of Hyndman (2014), the results show that the PSTs' perceptions of a good PE lesson developed during the professional socialization phase. Drawing on the work of Lawson (1983) and Richards et al. (2014), this can indicate that during PETE, PSTs learned important knowledge and skills the profession demands, and learned more about teaching and what is considered a good lesson, both in general and specifically in PE.

Conclusions

Similar to previous studies, our study paints a picture of a homogenous group of students with vast sports and physical activities experiences at enrolment. Following the PSTs' involvement in sports, and considering that a large part of their perception of PE may have been developed within these social fields, there is a risk that they, and perhaps especially male PSTs, will favour a (competitive) sports-focused PE practice in the future (Lundvall & Meckbach, 2004). This may be because through these experiences, or what Ferry and McCaughtry (2013) call a love affair, the PSTs have developed a subjective warrant and embodied a habitus that has implications for their perceptions of the purposes of education and the teacher profession (Croston & Hills, 2017; Flemons, 2017; Richards et al., 2014; Templin & Schempp, 1989). The results also show that during

² Due to small numbers, analysis was done without the characteristic of varying content.

PETE, PSTs continue their involvement in sports, which could have further reinforced their initial perceptions. Furthermore, the results show some differences between male and female experiences of sports and physical activities; however, there was no significant differences in male's and female's perception of a good PE teacher or lesson.

Unlike most other studies (cf. Adamakis & Zounhia, 2016; Graber, 1996; Mordal-Moen & Green, 2014), these results show that the PSTs' perceptions developed during PETE, at least regarding the characteristics of a good PE lesson. The lack of development in the PSTs' perceptions of a good PE teacher could be because they are suitable for teachers, but also because their initial perceptions on this question were well-grounded in their habitus (cf. Larsson, 2009) and further reinforced during PETE. If these perceptions had instead been found unsuitable for the profession and deemed necessary to be challenged during PETE, one suggestion would be to allow PSTs reflect on the actual perceptions they have embodied during the acculturation phase (Ferry, 2018). For instance, this could be done by giving PSTs assignments in which they critically examine their experiences and their perceptions of the PE teacher role, and then further discuss them together (Arnon & Reichel, 2007; Richards et al., 2013).

The development in PSTs' perceptions of a good PE lesson could be understood in relation to the programme's behaviouristic and traditional/craft orientation, focusing on preparing skilled teachers for the current school system (Backman & Larsson, 2016), and elements of PETE that offer PSTs opportunities to apply learned skills in real-life situations, thus learning important knowledge and skills the profession demands (Richards et al., 2014; Richards et al., 2018; Sirna et al., 2010). This can indicate that during PETE, they learned more about what a good lesson is, both in general and specifically in PE. This result suggests that real-life experiences during PETE is vital and important for PSTs' development during PETE (cf. Romar & Ferry, 2020).

One limitation of our study is the low number of PSTs who answered the questionnaire in each cohort (Table 1) and specifically both questionnaires (29%), which reduced the ability to analyse the personal development during PETE. Despite this, the results show that some development took place. In addition, the PSTs studied were from only one PETE programme in Sweden and had homogeneous backgrounds with extensive experiences in competitive sports. This may have caused the results to be specific to the local university and could therefore decrease the possibilities for an analysis of PSTs from different backgrounds. Despite this local context, the study shows similar results as previous studies on PSTs' backgrounds and experiences (cf. Larsson, 2009; Richards et al., 2019), and the presented results on PSTs' perceptions on the subject and professions could thus apply to PSTs in other contexts, where the traditional orientations towards PE, e.g. coaching and teaching (Lortie, 1975), do not exist similarly.

Another limitation of our study is that the actual changes in PSTs' behaviours and practice was not investigated. In that manner, other socialization effects during PETE may have been found, but would have required a different kind of study. To better understand these results and the possible reasons behind their development (or absence of), a deeper analysis of the organization and content of the specific PETE programme is required. It is also necessary to investigate the development in the PSTs' embodied perceptions and beliefs related to the subject and profession during the organizational socialization phase when they start working as PE teachers. Is the change in perceptions long-lasting, or are all developments washed out?

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