

Article

# Primary School Students' Relations to Physical Education in Northern Norway: Why Do Some Find the Subject Problematic?

Linda Hjemgård Johansen, Tor-Egil Nilsen, Siri Sollied Madsen \* and Svein-Erik Andreassen

Department of Education, The Arctic University of Norway (UiT), PO Box 6050 Tromsø, Norway; linda.h.johansen@uit.no (L.H.J.); tor-egil.nilsen@uit.no (T.-E.N.); svein.erik.andreassen@uit.no (S.-E.A.)

\* Correspondence: siri.s.madsen@uit.no

**Abstract:** A global discourse surrounding physical education (PE) is shifting towards a stronger emphasis on inclusive practises, but research shows that some students still find the subject problematic. This study explores the relationship between students' dread of physical education (PE) and overall school satisfaction among sixth graders in Tromsø Municipality, Norway, and identifies factors that might explain this relationship. Data were collected from 338 sixth-grade students, with an 85.5% response rate. In this study, we investigate through quantitative analyses whether there is a correlation between students dreading PE and their overall school satisfaction. We find a relatively low correlation between these factors, indicating that dreading PE may be related to factors beyond general school satisfaction. Three significant predictors of students' apprehension towards PE were identified: self-confidence and self-esteem, discomfort in changing into gym clothes in communal locker rooms, and reluctance to collaborate indiscriminately with peers. These factors could indicate a performance-oriented climate, which contrasts with the mastery-oriented approach emphasised in the national curriculum. The findings highlight the need for PE to be taught in a way that aligns more closely with the curriculum. This study suggests that addressing these issues requires educators who are formally trained to foster a supportive and motivating environment and calls for further research into the translation of curriculum objectives into teaching practises.

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## 1. Introduction

A global discourse surrounding physical education (PE) is shifting, with a growing emphasis on social and emotional development rather than solely focusing on sport. The implementation of health education and personal and social development within PE have been found across nations [1]. In Norway, the subject of gymnastics became compulsory in 1889 and was later renamed PE (In Norwegian, 'Kroppsøving' is translated to 'physical education' in the English version of formal curricula in Norway.) [2]. The subject's origins were marked by military discipline and partly by sports [2–4]. However, educational discourses related to the subject have shifted from a focus on performance to a focus on mastery (these concepts are defined later in this article). An example of this development was in 2012, when changes were made to the regulations of the Education Act, mandating that students' effort (in contrast to performance) should be part of the assessment criteria [5]. Another example is the competence goals in the current curriculum, LK20, in which it is stated that students should be able to 'recognise differences between oneself and others', 'include everyone' and 'explore one's own opportunities for exercising' [6]. No current competence goals in the subject of PE for primary education in Norway demand athletic skills, except for those concerning swimming. The absence of a performance focus is also

evident in the curriculum text 'Relevance and central values', which emphasises some of the subject's purposes:

- 'stimulating lifelong joy of movement and a physically active lifestyle based on personal qualities and abilities'
- 'practising and reflecting on interaction, co-responsibility, equality, and equal value'
- 'thinking critically about how the portrayal of the ideal body may affect self-esteem, health, fitness, and lifestyles'
- 'providing a foundation for learning to enjoy and respect nature and for developing environmental awareness' [6].

This set of purposes means that students can achieve high grades in the subject, even with low athletic skills. This demonstrates the clear distinction between PE as a subject in the Norwegian national curriculum and the more general phenomenon of sports. In the Norwegian national curriculum for primary schools, there is no subject for sports. Therefore, schools should not teach from the perspective of sports but from the perspective of PE [7] (pp. 102–104, 141–143, 190–193). Nonetheless, research shows that the teaching of PE is largely conducted with attention to sports and basic training [8,9] and is characterised by a performance-oriented climate [10–14]. A performance-oriented learning climate can negatively affect students' well-being and quality of life [15]. For instance, Haugen et al. [15] showed that autonomous motivation in PE was positively associated with students' intentions to be physically active after completing their schooling. The same study further showed that motivation was negatively predicted by perceived belonging and positively predicted by a performance climate. These findings led Haugen et al. to conclude that schools and PE teachers should recognise the importance of creating an inclusive and intrinsically motivating learning environment in the context of PE [16]. This finding is described as focusing on mastery experiences and positive relationships between participants. These studies suggest that PE in schools may not necessarily align with PE in the national curriculum.

Studies have shown that most students enjoy the subject of PE [9,13,17,18]. However, research has also shown that PE is a subject not all students are comfortable with. The literature review shows varying results on the percentage of students who enjoy the subject. Säfvenbom et al. [13] concluded that 43% of students were not satisfied with PE. Another study showed that up to 30% of children and young people report that they 'do not like' or 'hate' PE as they encounter it in school [19]. Findings from a national survey, however, indicated that only 2.3% of students in grades five through seven responded with 'bad' or 'very bad' to the question of how much they like the subject. The tendency is that the percentage of students who like the subject decreases with age [9].

The reasons why students do not like the subject are complex. One study showed that the teaching was conducted based on boys' interests, desire for competition, physical skills and stereotypical gender roles [13]. Studies also showed that students who are active in sports during their spare time enjoy PE more than those who do not participate in sports during their spare time [9,10,12,14]. Based on these findings, it appears that students who do not engage in competitive sports during their free time may not have the same opportunities to experience PE positively, despite the curriculum not focusing on athletic skills.

This study provides an important contribution to the field of research as research on PE is mostly directed towards higher levels of education, with little research focussed on primary school students. One study that included primary levels was a national study conducted by Moen et al. [9]. This national survey included a population that spanned from fifth to tenth graders, but data from sixth graders were not included in this study [9] (pp. 2). Analysis is furthermore often conducted based on the division of primary and secondary education, clustering several levels within these categories, and not based on each individual educational level. In-depth knowledge about physical education within each of the different levels of education is lacking in research and is, to a large degree, based on descriptive statistics.

An initial motivation for this study stemmed from curiosity about whether the findings in Moen et al. [9] were representative for sixth graders in Tromsø Municipality. As it was found that a performance climate can negatively affect students' well-being and that the tendency to enjoy the subject decreases with age, we also found it important to gain more knowledge related to whether these can be understood in connection with each other. Our hypothesis is that there is a link between students' perception of being part of a performance climate and their reasons for why the subject can be found problematic. This study contributes knowledge about sixth graders by investigating which factors come into play when analysing how they relate to the subject.

As data for the national survey were collected in 2016, our survey could also contribute to new insights in a field that is continuously evolving and changing. Furthermore, none of the studies we have reviewed conducted specific analyses related to the relationship between students' reluctance or aversion towards PE and their general well-being at school, which this article addresses. Insight into these issues could contribute to the ongoing debate regarding subject-specific challenges related to how PE is operationalised and practised in schools.

This information leads to the following two research questions:

1. What is the relationship between students dreading PE and their overall school satisfaction among sixth- graders in Tromsø Municipality in Norway?
2. Can factors related to performance climate help explain the relationship between these two conditions?

### *1.1. Gender, Age and Students' Perceptions of PE*

The 2030 agenda for sustainable development is explicitly focusing on both quality in education and gender equality as important elements of the global sustainable development [20]. The gender aspect within research on PE has, in recent years, been investigated internationally. González-Gutiérrez et al. [21] investigated primary and secondary students' perception of PE for Spanish students. They also found that students, in general, liked the subject but found that primary level students enjoy the subject more and felt more interested and motivated for the subject compared with secondary students. When differentiating on gender, they found that the boys' responses reflected higher values, meaning they were more positive towards the subject. Why students' perception of PE declines with age could be a complex situation, involving both qualities related to the subject as well as developmental changes within the children, such as puberty and the lack of confidence that often follows this stage of children's lives. Nevertheless, knowing how PE is experienced through different stages of the education system could be a valuable insight when addressing challenges related to PE. As presented in the introduction, the quality of education is important for how the subject is perceived and how students are motivated for the subject.

### *1.2. Motivation Climate*

There are two theoretical concepts that we will use in the Discussion Section of this article to interpret the findings from the statistical analyses. These two concepts were based on an understanding that students' 'interpersonal qualities in the school context are likely to entwine with how the motivational climate is perceived' [22] (p. 1137), and two main types of motivational climates were identified: a mastery climate and a performance climate. As explained by Tharaldsen et al. [22], there is a difference in both values and defined success in these two environments.

### 1.2.1. Performance Climate

In a performance-oriented learning environment, the main focus is on competition and winning. In such a learning environment, the greatest emphasis is placed on results [23,24]. In other words, there is less acceptance for practise and exploration, which LK20 describes as central to PE [6]. A PE teacher with a performance-oriented mindset will compare the results of their students. Students with this focus are concerned with themselves, and their sense of competence depends on how they perform compared to others [25]. It is more important how students are perceived by others than what they learn. A driving force becomes showing how skilled one is, which can lead to negative attention, resulting from the fear of failing or the fear of making a fool of oneself in front of classmates [26]. In such an environment, most attention will be given to the students who master the activities best from an athletic perspective [23,24].

Tharaldsen et al. [22] describe how a predominant focus on comparable results could negatively impact students. Their research indicates that, within a performance climate, many students are likely to experience stress due to the risk of perceiving that they lack the resources they need to accomplish the valued results. One important distinction to make regarding performance is whether it is intrinsic or extrinsic. Chatterjee et al. [27] found that intrinsic motivation has a positive impact on students' attitudes towards the subject, while external pressure (extrinsic motivation) resulted in a decrease in positive attitudes. A performance climate could affect students negatively as it could be perceived as an external pressure to perform. Ulstad et al. builds on the notion of autonomy, competence and social relationships as a psychological foundation for motivation and found that a performance climate was negatively related to students' efforts and intrinsic motivation and was indirectly affecting their grades in the subject [28].

Traditional PE has been perceived as focused on performance. When Eirín-Nemiña et al. [29] investigated prior conceptions held by prospective teachers upon entering initial teacher training, they found their understanding of the subject to be linked with competitiveness.

### 1.2.2. Mastery Climate

A mastery climate, on the other hand, is characterised by a learning environment focusing on the learning process instead of the results. Furthermore, the learning process is understood and related to the students' individual frames of reference, and this process is the outset for defining reachable learning goals for each student [22]. In such a climate, all participants are to receive equal recognition and attention, regardless of skills [28]. Students in a mastery-oriented environment are concerned with gaining increased understanding, more insight and better skills to master the tasks in the subject. The student is focused on increasing competence through effort, and the sense of increased competence depends on the student learning, understanding and improving compared to their own previous results [25]. Students who have a mastery-oriented mindset are often driven by intrinsic motivation and a desire to master tasks, learn something new or improve their knowledge and skills [26]. A mastery climate in PE was found to have a positive connection to satisfaction of students' autonomy, competence and social relationships, which indirectly had a positive impact on their grades [28]. The focus on mastery climate is not limited to a Norwegian educational context; international research reflects similar discourses, whereas Debbarma and Devi [30], based on an Indian study, claim that "Physical education programmes must meet the needs of youth within a changing environment while discovering ways to motivate them to develop life-long exercise habits", arguing the need for focusing on the students' prerequisites.

### 1.2.3. Context Dependent

It is important to note that real life is more complex than this theoretical distinction between two main types of motivational climate. And there will be individual differences

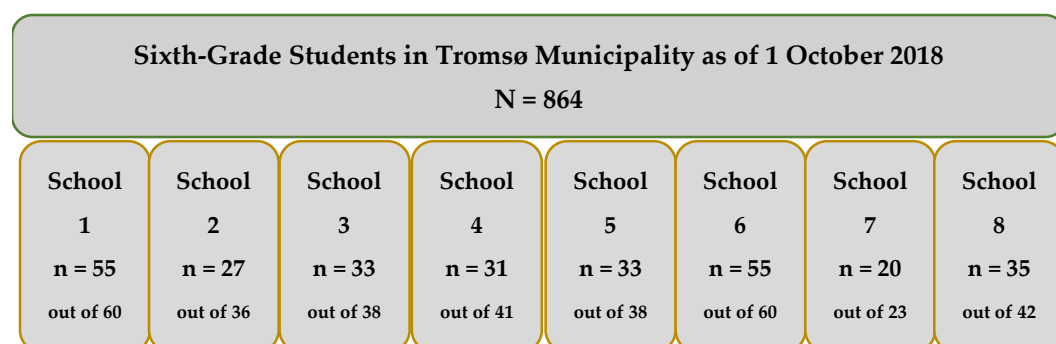
regarding how the different climates will affect your motivation to learn. How the climate is perceived will also be a subjective experience as students will interpret and react differently to the same context. Nevertheless, there are some differences in curricula across Europe. Aasland [31] found that, while curricula in England and Wales were dominated by performance and sports, Nordic nations were more oriented towards health and, through this orientation, gained a stronger position within the educational system [32,33].

## 2. Material and Methods

This study is based on a cross-sectional case study design in which data collection occurs at a specific point in time, allowing for an examination of a phenomenon at that particular moment [34]. We based this study on quantitative data collected through a survey. A quantitative method was chosen as it was crucial to gather data from a larger sample to answer the research question. The method was selected to provide general insights into a social phenomenon based on a larger group of students, contrasting with in-depth explorations of individual experiences [35].

### 2.1. Sample

The case consists of sixth-grade students from primary schools in Tromsø Municipality. The municipality of Tromsø was chosen as it is the most populous municipality in northern Norway. Students were selected using a random sampling strategy (lottery principle). Statistically, this means that all sixth-grade students in the municipality had an equal chance of being included in the sample. However, there were no available lists of all sixth-grade students in the municipality, so random cluster sampling was used based on school affiliation. Eight out of the municipality's total twenty-four schools were selected, and all eight schools agreed to participate in the survey (see Figure 1 for an overview). This resulted in a sample of 338 students out of a total population of 864 (as of 1 October 2018). Of the 338 sixth graders included in the sample, 289 responded to the survey, yielding a satisfactory response rate of 85.5%. Not all classes were fully present on the survey day due to random absences. The sample was relatively evenly distributed by gender, with 54.7% boys ( $n = 158$ ) and 45.3% girls ( $n = 131$ ).



**Figure 1.** The conducted sampling strategy, including the population and the actual responses from each participating schools.

### 2.2. Survey

The survey consists of 38 items, initially mapping what school the respondent attends and their gender. The four following items were variables that gave context regarding the students' activities in their own spare time and the physical activity of the students' family members. The following nine items were standardised and designed as statements for participants to evaluate. The response options were formatted according to a Likert scale, with statements graded into five categories (strongly agree, agree, uncertain, disagree and strongly disagree), corresponding to scores of one through five. These statements revolving around to what degree the students liked being at school, liked PE, as well as asking

about different elements associated with PE (such as dancing, swimming, outdoor activities, team-oriented sports and individual sports). The following six statements were constructed around the students' more general attitude towards the subject, and the next six statements were constructed to explore contextual factors that could affect how the students relate to the subject. The nine following statements were constructed to gain insight into relational aspects of PE and how students viewed themselves in relation to others. The last two statements were about their relation to the PE teacher.

The construction of the items and the design of the survey was inspired by the national survey study conducted by Moen et al. [9], with some adjustments and additions. The survey statements were categorised to map out aspects related to the students and their life situations, their relationships with PE and explanations aimed at understanding why the subject might be problematic for students. Out of the 38 items, the aim of our study led us to further investigate the relationship between the students' gender and these nine Likert statements (see Table 1):

**Table 1.** An overview of the items used for the following analysis.

<b>Intention:</b>	<b>Statements:</b>
Investigation of students' relationship between PE and their general well-being at school	I like being at school
	I am dreading to participate in PE classes
Investigation of possible motivationally related factors that could explain why some students found the subject problematic (building on the notion of autonomy, competence and social relationships as a psychological foundation for motivation [28]).	I don't like PE because I'm not good at it
	I dread changing into gym clothes in the locker room
	I do not like PE because I have to collaborate with just anyone
	I am afraid of being laughed at in PE classes
	I am afraid of making a fool of myself in PE classes
	I think boys and girls should have PE together
	I like to demonstrate my skills in PE

### 2.3. Data Collection

The data were collected digitally over two weeks in February 2019. We contacted the relevant teachers and scheduled times for implementation. Information letters were sent to the teachers, who distributed them to students and their guardians. Participation was voluntary, and no students opted out. During the survey administration, students were given tablets that directed them straight to the survey. Completing the survey took about ten to fifteen minutes. To ensure that the students understood the questions and to ensure the survey's reliability regarding equivalence, we conducted a pilot test with a class similar to the target group. After the pilot study, we discussed the survey with the students to identify any ambiguities or questions. The feedback indicated a need to define some terms used in the survey, such as 'team sports' and 'individual sports'. This insight led to a thorough review of terms and concepts with the students before the survey to clarify any uncertainties.

### 2.4. Analysis

The analysis was performed using SPSS version 25. Descriptive statistics were reported using percentage distribution, means and effect sizes. Effect sizes are presented using Cohen's *d* (0.2 = small difference, 0.5 = medium difference and 0.8 = large difference) [36] (p. 267). We used Pearson's *R* for correlation analyses, which provides a correlation measure on a scale from  $-1$  to  $+1$ , on which 0 indicates no correlation [37]. Additionally, multiple regression analysis was conducted, in which the regression coefficient measures how much each explanatory variable influences whether students dread PE classes. None of the variables had missing values, and the results are reported as percentages.

### 2.5. Ethics

A central principle in social research is to ensure that those being studied are well informed about the research's purpose, who will have access to the gathered information, what will happen to the information and that participation is voluntary [38]. Informed consent was obtained through written information provided to guardians and verbal instructions given to students during implementation. The survey was conducted anonymously, and we, as researchers, cannot trace the responses back to the individual respondents or identify specific students. When a study does not involve the processing of personal data, it is not subject to notification [39]. Therefore, this study was not registered with NSD (now Sikt).

Regarding research on children, Sikt states that younger children cannot consent on their own behalf and cannot exercise their rights or protect their interests. The age limit for projects involving special categories of personal data is sixteen years, while, for projects with non-sensitive data and personal information, the age limit for self-determination is based on a discretionary holistic assessment. It is crucial that the information is clear enough for children to understand what participation entails [39], which we believe was achieved based on the interaction with the students. According to the UN Convention on the Rights of the Child and based on Norwegian law, children have the right to be heard, and according to Article 12 of the Convention, a child capable of forming their own views has the right to express those views freely in all matters affecting them. A child's views should be given due weight in accordance with the child's age and maturity [40]. Through close dialogue and presence during data collection, it was assessed that the participants, aged between eleven and twelve, were capable of understanding what participation entailed. Furthermore, it was assessed that the benefit of knowledge about the challenges highlighted in this study outweighs the potential disadvantages for individual participants. It is also important to discuss any reliability and validity challenges that may arise when children are the subject of research.

### 2.6. Reliability and Validity

As described, internal reliability was addressed through a pilot study to minimise potential misunderstandings related to the survey. Additionally, support was provided during administration in cases in which students had reading or writing challenges. Internal reliability was further statistically controlled by calculating Cronbach's alpha for statements that could be grouped into aggregate variables. This step was to check that students were consistent in their responses, and the analysis resulted in satisfactory alpha levels. Furthermore, the consistency of the findings was checked against new data collected in 2022 as a post-test of the study's findings. The post-test was conducted at the same time of year with five sixth-grade classes in Tromsø Municipality. The results were relatively similar to the 2019 findings. For example, the variable *I am afraid of making a fool of myself in PE classes* showed that, in 2019, 29.8% agreed or strongly agreed, while, in 2022, the result was 28.1%. For the statement *I am afraid of being laughed at in PE classes*, 18% agreed or strongly agreed in 2019, while this result was 19.2% in 2022. Based on these findings, this study's internal reliability was considered to be satisfactory.

To achieve internal validity, the survey was designed to gather relevant data for research question 1. This goal was achieved by including statements about both satisfaction and dissatisfaction related to PE, as well as general satisfaction and dissatisfaction related to other aspects, such as school satisfaction and extracurricular activities.

Regarding external validity, this study aims to generalise from the strategic sample to the population of sixth graders in Tromsø Municipality. The sample size, sampling strategy and achieved response rate of 85.5% contribute to this generalisability. External reliability is ensured through a detailed description of the sample, method, analysis and results, both earlier and later in this article.

### 3. Results

The results are divided into two main parts, corresponding to the structure of this study's two research questions.

#### 3.1. The Relationship Between Dreading PE and General School Well-Being

As an overarching clarification for further analysis, we initially examined whether dreading PE is related to students' overall well-being at school. The relationship between these two factors was explored using a correlation analysis between the variables *I dread PE classes* and *I like being at school*. This clarification is important to conclude whether our findings related to PE are subject-specific challenges or if what we find reflects the students' general well-being at school. We find a statistically significant relationship between these two variables ( $p < 0.001$ ) but with a relatively low negative correlation ( $-0.31$ ). This result means that there is a relationship between dreading the subject and general school well-being.

Since the correlation is somewhat low, it also means that the students' relationship with PE does not solely reflect their general well-being at school. This finding indicates that there are subject-specific factors influencing the students' relationship with the subject, which we further investigate in the following sections.

#### 3.2. Factors That May Help Explain Why Some Students Dread PE

##### 3.2.1. Descriptive Statistics: Gender as a Factor

For statements related to dreading PE classes, both genders score above four on average, indicating that the vast majority do not dread PE (see Table 2). The effect size ( $d$ ) between genders is 0.27, suggesting that there is a difference in the degree to which boys and girls dread PE, but the difference is small. Girls dread it slightly more than boys.

**Table 2.** Response to the statement *I am dreading to participate in PE classes* (results expressed as percentages).

	Completely Agree	Agree	Uncertain	Disagree	Completely Disagree	Mean (SD)
Boys	2.5	1.9	6.3	17.7	71.5	4.54 (0.89)
Girls	2.3	7.6	9.2	21.4	59.5	4.28 (1.06)
Total	2.4	4.5	7.6	19.4	66.1	4.42 (0.98)

The results indicate that 6.9% of all students strongly agree or agree with the statement *I dread PE classes*. Additionally, 14.5% of students either strongly agree, agree or are uncertain. This result can be interpreted as 14.5%, potentially with some degree of concern or uncertainty related to PE classes. When broken down by gender, this result applies to 10.7% of boys and 19.1% of girls. Gender does not have a major impact on whether students dread the classes, but it is a contributing factor.

##### 3.2.2. Correlation Analysis

The survey includes several other individual variables designed to help uncover why students dread PE classes (see Table 3). To determine how these factors relate to whether students dread PE, we conducted a correlation analysis of possible explanatory variables. The variable most strongly correlated with dreading the class is whether students perceive themselves as having adequate abilities in the subject. A lack of belief in one's own abilities is therefore closely related to whether a student dreads the classes (I don't like PE because I'm not good at it,  $r = 0.58$ ). Another explanatory variable with a high correlation to students dreading PE classes is related to changing into and out of gym clothes in the locker rooms (I dread changing into gym clothes in the locker room,  $r = 0.53$ ). A social aspect of PE is that it involves getting physically close to classmates, and having to cooperate with



just anyone is also correlated with dreading the classes (I do not like PE because I have to collaborate with just anyone,  $r = 0.47$ ). Important to note that the word used in Norwegian for ‘just anyone’ (‘hvem som helst’) indicates that the collaboration is not based on the student’s own choice or preferences. The Norwegian term emphasises that it could be anyone in your PE class, not just others in general. The fear of being laughed at and the fear of making mistakes are somewhat less correlated,  $r = 0.40$  and  $r = 0.38$ , respectively, while attitudes towards having PE with the opposite gender, enjoying showing off and personal abilities do not seem to significantly affect whether students dread the classes.

**Table 3.** Correlation analysis of dreading PE classes and possible explanatory factors (\*\* < 0.001).

I Am Dreading to Participate in PE Classes	Pearsons’ R
I don’t like PE because I’m not good at it	0.58 **
I dread changing into gym clothes in the locker room	0.53 **
I do not like PE because I have to collaborate with just anyone	0.47 **
I am afraid of being laughed at in PE classes	0.40 **
I am afraid of making a fool of myself in PE classes	0.38 **
I think boys and girls should have PE together	−0.26 **
I like to demonstrate my skills in PE	−0.21 **

### 3.2.3. Descriptive Statistics of Other Explanatory Variables

For all the variables in the correlation analysis, we also examined the distribution and differences between genders for the nine factors that could explain why some students found the subject problematic (see Table 4). Regarding whether students dislike PE due to negative evaluations of their own skills, there is a small difference between genders ( $d = 0.26$ ), but the majority disagree or strongly disagree with this (82%). In questions related to the locker room situation, there are larger differences in responses between genders ( $d = 0.33$ ). There is a small to medium difference between boys and girls, with girls finding the locker room situation somewhat more problematic than boys. The average score is 4.19, indicating that most students do not find this situation an issue they dread. Regarding statements about collaboration with just anyone, there is no difference between genders. The average score is 4.01, and most students do not feel that having to collaborate with just anyone affects their experience of PE ( $M = 1.21$ ).

When it comes to fears about being laughed at in class, the differences between genders are larger ( $d = 0.46$ ), but it is still important to note that the majority of both boys and girls deny that this is a concern. There is also a small-to-medium difference between genders when looking at whether students are afraid of embarrassing themselves in class ( $d = 0.37$ ). For both factors, girls express greater concern than boys.

A total of 78.9% of students agree or strongly agree that they think boys and girls should have PE together, but nearly 10% of girls disagree or strongly disagree with this statement. The majority enjoy showcasing their abilities in class, but there is a small difference between boys and girls; girls are somewhat more likely to disagree with this statement (35.1% of girls are unsure, disagree or strongly disagree).

**Table 4.** Factors that may explain the findings in Table 2, with calculated effect sizes between genders. Results presented as percentages.

Statements:		Completely Agree	Agree	Uncertain	Disagree	Completely Disagree	Mean (SD)	Effect Size (d)
I don’t like PE because I’m not good at it	Boys	1.9	1.9	10.1	20.3	65.8	4.46 (0.89)	0.26
	Girls	3.8	6.1	12.2	22.1	55.7	4.20 (1.11)	
	Total	2.8	3.8	11.1	21.1	61.2	4.34 (1.01)	
I dread changing into gym clothes in the locker room	Boys	3.8	1.3	12.0	20.9	62.0	4.36 (1.00)	0.33
	Girls	7.6	7.6	12.2	24.4	48.1	3.98 (1.27)	
	Total	5.5	4.2	12.1	22.5	55.7	4.19 (1.15)	
	Boys	5.7	8.2	15.2	19.6	51.3	4.03 (1.23)	0.02

I do not like PE because I have to collaborate with just anyone	Girls	5.3	7.6	13.7	28.2	45.0	4.00 (1.18)	
	Total	5.5	8	14.5	23.5	48.4	4.01 (1.21)	
I am afraid of being laughed at in PE classes	Boys	5.1	7.6	10.1	19.0	58.2	4.18 (1.19)	0.46
	Girls	9.2	15.3	17.6	22.1	35.9	3.60 (1.35)	
	Total	6.9	11.1	13.5	20.4	48.1	3.92 (1.30)	
I am afraid of making a fool of myself in PE classes	Boys	11.4	11.4	20.9	29.1	27.2	3.49 (1.31)	0.37
	Girls	16.0	22.1	22.9	23.7	15.3	3.00 (1.31)	
	Total	13.5	16.3	21.8	26.6	21.8	3.27 (1.33)	
I think boys and girls should have PE together	Boys	44.3	32.9	19.0	2.5	1.3	1.84 (0.91)	0.03
	Girls	54.2	26.7	9.2	3.8	6.1	1.81 (1.14)	
	Total	48.8	30.1	14.5	3.1	3.5	1.82 (1.02)	
I like to demonstrate my skills in PE	Boys	41.8	29.7	20.9	6.3	1.3	1.96 (0.99)	-0.21
	Girls	34.4	30.5	21.4	9.9	3.8	2.18 (1.13)	
	Total	38.4	30.1	21.1	8.0	2.4	2.06 (1.06)	

Although the findings show that many students are satisfied and express no concerns regarding PE, a relatively large proportion of students express a negative or uncertain attitude towards the subject in various ways. Table 5 shows the percentage of students who are either uncertain or critical of the subject based on different statements.

**Table 5.** Distribution of students who responded that they strongly agree, agree or are unsure regarding the statements (\* Distribution of students who responded that they strongly disagree, disagree or are unsure regarding the statements).

Statements	Total	Boys	Girls
I am dreading to participate in PE classes	14.5%	10.7%	19.1%
I don't like PE because I'm not good at it	17.7%	13.9%	22.1%
I dread changing into gym clothes in the locker room	21.8%	17.1%	27.4%
I do not like PE because I have to collaborate with just anyone	28.0%	29.1%	26.6%
I am afraid of being laughed at in PE classes	31.5%	22.8%	42.0%
I am afraid of making a fool of myself in PE classes	51.6%	43.7%	61.0%
I think boys and girls should have PE together *	21.1%	22.8%	19.1%
I like to demonstrate my skills in PE *	31.5%	28.5%	35.1%

When examining the group expressing uncertainty or negative attitudes towards PE, gender differences become apparent. A larger proportion of girls than boys experience negative aspects related to PE. This finding applies to all variables except *I do not like PE because I have to collaborate with just anyone* and *I think boys and girls should have PE together*.

### 3.2.4. Multiple Linear Regression Analysis

We further employed multiple regression analysis to understand how the explanatory variables (presented in Table 3) affect whether students dread PE lessons (used as the dependent variable in the regression model). Table 6 reports only the statistically significant variables. The regression model has an explanatory power of 45% (adjusted R-squared = 0.45), indicating that 45% of students' dissatisfaction with PE can be explained by three of the factors in the regression model.

**Table 6.** Statistically significant predictors from the regression model, presented with regression coefficient and *p*-value. Dependent variable: I am dreading to participate in PE classes.

Statistically Significant Predictors	Standardised Beta	<i>p</i> -Value	95% CI
1. I don't like PE because I'm not good at it	0.36 ***	<0.001	0.24, 0.47
2. I dread changing into gym clothes in the locker room	0.30 ***	<0.001	0.17, 0.35
3. I do not like PE because I have to collaborate with just anyone	0.19 ***	<0.001	0.07, 0.35

\*\*\* Significant at the <0.001 level.

## 4. Discussion

This section will discuss the results and explore possible connections between the survey results, the national curriculum for the subject and literature review. First, we will discuss the correlation between students dreading PE and their overall school satisfaction. Following this, we will discuss each of the statistically significant factors that predicts why some students are dreading the subject.

### 4.1. Subject-Specific Factors Contributing to Students' Apprehension Towards PE

It is important to stress that our study reveals that 85.5% of the students in the sample do not dread PE classes. This finding is consistent with results from a previous national survey by Moen et al. [8]. As presented in the Results Section, findings suggest that apprehension towards PE is not solely linked to students' general satisfaction with school. This finding implies that some students' concerns may be attributed to subject-specific factors. Students' experience of PE is part of and affecting their general satisfaction with school. Since school satisfaction has a great positive association with life satisfaction [41], it is important to have knowledge of subject-specific challenges to be able to counter issues that could natively affect students' well-being. We have identified three key explanatory factors in the Results Section, which we discuss under the following themes: self-confidence, the locker room situation and social relationships. In the following discussion, we argue that these elements could be related to the experience of PE as performance oriented. As previously explained, autonomy, competence and social relationships can be understood as a psychological foundation for motivation [28], and different ways these factors are taken into account can result in different motivational climates. The three explanatory factors derived from our regression analysis could be understood as including elements of all three aspects but in ways related to performance climate. In the following, we will discuss each of the three.

### 4.2. Three Explanatory Factors

#### 4.2.1. Self-Confidence: I Don't Like PE Because I'm Not Good at It

Several theoretical approaches have been used to define self-confidence and is often based on Bandura's concept of self-efficacy [42]. Self-efficacy is defined as the individuals' belief in one's abilities to perform a task and achieve the desired result [43]. The statement *I don't like PE because I'm not good at it* is linking the student's negative assessment of their own abilities as a reason for not liking the subject. We find a high correlation between dreading PE classes and disliking the subject due to perceived lack of ability ( $r = 0.58$ ), as well as the fear of being laughed at or making mistakes ( $r = 0.40$  and  $0.38$ , respectively). The high correlation between self-doubt and apprehension suggests that students who dread PE perceive the learning environment as performance oriented rather than mastery oriented. As described by Petersen and Krogh [26], a performance-oriented climate can instil a fear of failure or embarrassment in front of peers. Positive relationships between students and teachers, as well as a mastery-oriented learning environment, can be crucial for students' self-perception in the subject [16]. To promote the lifelong enjoyment of physical activity as intended by the LK20 curriculum, a mastery-oriented learning climate would be more beneficial than a performance-oriented one. A mastery-oriented environment would likely reduce apprehension by shifting the focus away from performance (or the fear of not performing) as central. Despite only a relatively small percentage of students dreading PE because they feel they are not good at it (6.6%), a significantly larger proportion report being afraid of making mistakes (29.8%) or being laughed at during lessons (18%). Fear of being laughed at can be detrimental to both the subject and students' experiences, resulting in academic lag compared to peers and leading to a more negative self-image [25]. This finding indicates that the challenge is both based on internal dialogues regarding the students' ability to succeed, as well as a social aspect related to how

other perceive efforts made during PE. Strengthening students' self-esteem is important, as it has been found to be a main predictor for general life satisfaction [44].

#### 4.2.2. Locker Room Situation: I Dread Changing into Gym Clothes in the Locker Room

As Fagrell et al. writes, "There is no other school subject in which the body is as exposed as in Physical Education (PE). Neither is there a subject where one is more dependent on others' reactions to the body" [45] (pp. 101). This also applies to the locker room situation. The national survey by Moen et al. [9] found that 13.8% of students were disagreeing or strongly disagreeing with the statement *I find it ok to shower after PE*. Other findings that could be related to this issue, was the experience of the locker room situation as loud, a concern regarding being taken pictures of and the state of the facilities [9]. A study also found that students were either not showering, showering with clothes on due to shame related to their own body and an unease related to being naked in front of peers.

PE aims to promote a positive self-image, which can contribute to a secure identity. For some, this is a challenge, as we find a high correlation between apprehension about PE classes and changing in the locker room ( $r = 0.53$ ). This finding may indicate that children as young as eleven to twelve years old feel insecure about their bodies. This issue is complex and part of a broader context but is crucial to address within the subject. Through PE, students are expected to learn to make healthy choices for themselves and others throughout life and to understand bodily differences between themselves and others [6].

Apprehension about changing in the locker room may stem from various factors, such as the locker room serving as an unsupervised space where negative peer interactions can occur more freely. It could also relate to a performance-oriented climate concerning appearance and body, in which students feel insecurity about their bodies and discomfort from comparing themselves to others. The Ungdata survey from 2022 shows that 71% of Norwegian youth experience body pressure to some extent [46]. The use of social media is leading to pressure related to body image for both boys and girls [47], while other research suggests that girls tend to be more affected than boys [48]. Fritze et al. [49] show that 94% of children and young people aged nine to sixteen have access to a mobile phone, and the Ungdata report shows that 77% use the internet daily [46]. According to the Minister of Children and Equality, social media presents challenging body ideals to children and adolescents, with edited, unrealistic images contributing to unhealthy body, diet and exercise attitudes [50]. It is also found that social network site use predicts more frequent receptions of peer appearance-related feedback [47], which could contribute to a locker room climate also characterised by competition based on appearance. These findings suggest that the context of PE needs to include the locker room situation and not just the time spent during lesson. It also indicates a need for PE teachers with professional digital competence to address challenges children are facing in today's digital society.

#### 4.2.3. Social Relationships: I Don't Like PE Because I Have to Collaborate with Just Anyone

Regarding the factor measuring to what degree the students are liking PE due to collaborative elements it is important to note that the word used in Norwegian for just anyone ('hvem som helst'), indicates that 'anyone' is not based the student's own choice. The Norwegian term emphasises that it could be anyone in your PE class. According to the Education Act, schools have a specific responsibility for students' health, well-being and learning, through ensuring that students have a good psychosocial school environment [51] (§ 9a-2). Children start school with varying backgrounds, including different upbringings, socialisation and economic and cultural contexts [52]. The overarching part of the curriculum describes that everyone should learn to collaborate and function with others [53]. However, our study shows that 13.5% of students agree or strongly agree that they dislike PE because they must collaborate indiscriminately with peers. According to Standal [54], social relationship difficulties may explain why some students do not want to collaborate with others. For example, Bø [55] describes that collaborative tasks in PE do not automatically ensure good social relationships between students. He further explains

that the unreflective use of collaborative tasks can contribute to social issues within student groups. This third explanatory factor may also stem from students perceiving the purpose of collaboration as performance oriented. According to the national curriculum for PE, the purpose of collaboration is mastery oriented, a view supported by Andreassen and Tiller [7] (p. 148).

#### 4.2.4. Possible Connections Between Results, Policy and Reality

Overall, both the literature review presented in the Introduction and our Results suggest that there may be a gap between PE in practice and the national curriculum. The results from this study indicate that a relatively large proportion of students perceive the learning environment as performance oriented and that some students' apprehension towards PE may be related to subject-specific factors rather than solely reflecting their general attitudes towards school. Based on the literature review and this study, the following reasoning chain provides a possible explanation:

1. The Norwegian national curriculum for PE is sometimes operationalised in schools by teaching dominated by perspectives from sports.
2. With this follows a risk of translating the intended mastery-oriented curriculum into performance-oriented practises in schools.
3. This can be understood as a factor affecting why some students dread PE classes.

If this reasoning is correct, there is a misalignment among teachers when translating the national curriculum for PE (LK20) into local practice. Further research should explore this issue, potentially using Røvik's [56] models for ways that ideas and recipes are translated in organisations. Two of Røvik's concepts are in reproductive and modifying mode. Copying characterises the reproductive mode, while addition and subtraction are typical of the modifying mode [56] (p. 308). An assumption for further research could be that local practice has been translated in reproductive mode from the time when the subject was called *gymnastics*, rather than from the current subject of PE. In modifying mode, it could be influenced by *sports* to create measurable parameters for assessing students' achievements. Research shows that the subject, to a great degree, is thought by teachers without formal competence [8,9]. Eirín-Nemiña et al. [29] highlight the importance of formal competence in their study by looking at students' concepts and beliefs about PE prior to and after an educational intervention focusing on the didactics of PE. They found that formal education made students, to a greater degree, value positive concepts of learning, socialising, participating and playing in PE, highlighting the importance of qualified staff to ensure that the curriculum is operationalised according to its intentions. Brown and Lloyd [57] argue that one of the first 'obligations' of the PE teacher as a scholar—practitioner is to 'know their field' socially, culturally, politically and historically. They draw on Bourdieu's notion of capital and argue the need for PE teachers' ability to reflexively position themselves; when lacking this ability, PE professionals become agents of the field, reconstructing its logics and traditions uncritically [57].

## 5. Conclusions

We asked the following research questions:

1. What is the relationship between students dreading PE and their overall school satisfaction among sixth- graders in Tromsø Municipality in Norway?
2. Can factors related to performance climate help explain the relationship between these two conditions?

### 5.1. Answer to Question 1

There is a certain degree of correlation between students' apprehension towards PE and their overall school satisfaction. However, the correlation coefficient is relatively low, leading us to conclude that there are also subject-specific reasons for students' apprehension that do not solely reflect their general school satisfaction.

### 5.2. Answer to Question 2

Several factors appear to contribute toward explaining why some students dread PE. We identified seven explanatory variables with correlations ranging from low to relatively high. Using regression analysis, we highlight three statistically significant predictors:

1. I don't like PE because I'm not good at it.
2. I dread changing into gym clothes in the locker room.
3. I don't like PE because I have to collaborate with just anyone.

Generally, for nearly all seven explanatory variables (Table 4), girls express more dissatisfaction or concern regarding PE compared to boys. This finding is also true for variables 1 and 2 in the regression model (Table 6), for which there are small-to-medium differences between genders (Table 4,  $d = 0.26$  and  $0.33$ ). However, there are no notable differences between genders for variable 3. Our findings suggest that a negative self-image (perceiving oneself as 'not good enough') and apprehension about changing in the locker rooms are the factors that most significantly explain why some students dread PE. The students' responses to the survey support the possibility of translation errors when the national curriculum for PE is implemented in local practise. In light of the challenge related to traditional discourses still found when PE is operationalised, we argue that one important step towards more constructive alignment within PE is to ensure qualified staff are teaching to avoid a reconstruction of performance as central in the subject.

Beyond addressing the research questions, this study has led to new questions. Table 5 reveals a pattern suggesting a need for further research: for most variables, girls show greater uncertainty or dissatisfaction with PE and related aspects compared to boys. Exceptions are two variables for which boys' and girls' responses are nearly identical: *I don't like PE because I have to collaborate with others* and *I think boys and girls should have PE together*. For these two variables, boys are slightly more likely than girls to view the requirement to collaborate with others negatively (Table 5). To better understand the reasons behind these results, further qualitative research should explore cross-gender dynamics and the discursive and cultural assumptions related to gender and PE in primary schools. Information regarding how PE is perceived across the different school levels is crucial when didactically designing the lessons with intention to (1) stimulate the lifelong joy of movement and a physically active lifestyle based on personal qualities and abilities, (2) practise and reflect on interaction, co-responsibility, equality and equal value and (3) think critically about how the portrayal of the ideal body may affect self-esteem, health, fitness and lifestyles [5].

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