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PEDAGOGY

What Kind of Learning Climates Are Established by Newly Educated PE Teachers in Primary and Lower Secondary School? A Quantitative Analysis of Students' Perceptions

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Abstract

The aim of this study was to explore Norwegian students' perceptions of learning climate established in physical education (PE) by newly educated teachers. The findings substantiate that the newly educated PE teachers created a favorable learning climate, and the motivational inventory confirms that the students perceived a predominance of mastery climate in the teaching. This may mean that the recent years' reforms in PE and PE teacher education, with an increased focus on a mastery-oriented learning climate, have affected students' experience of the subject. However, there is still a need for stronger efforts related to facilitation of the learning climate.

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A feature of academic literature on physical education teacher education (PETE) is the expectation that it can and should impact student teachers' beliefs and prospective practices in some significant ways (Mordal-Moen & Green, 2014). High-quality PETE can strengthen teaching orientations (Pike & Fletcher, 2014), and it is therefore interesting that observation of teacher behavior reveals lower levels of instructional support than of emotional support and classroom organization (Allen et al., 2013; Pianta, Hamre & Allen, 2012; Westergård et al., 2018; Havik & Ertesvåg, 2018). Helgevold et al.'s (2015) findings show that preservice teachers focus is primarily directed toward students' doings and classroom organization in the teaching session and to a lesser extent students' learning and teachers' instructional support. There is also high emotional support and low learning support among PE teachers whose primary task is to create a positive atmosphere and effective organizing to ensure that the students are in good shape through physical exercise (Mjåtveit & Giske, 2017). Altogether, these findings indicate that more knowledge about teachers teaching in general and PE in particular is needed. Moreover, based on a case study design, Moen's (2011) analysis of PETE teachers reveals several challenges for PETE programs in Norway. The criticisms cover a variety of areas, including a concern over persistent content-focused pedagogy prioritizing skills and technique-based instruction before learner-centered pedagogy. Unfortunately, there is limited scientific knowledge about the learning enterprise with newly educated teachers. Such empirical knowledge can revitalise PETE and ensure a more knowledge-based curriculum and in addition can contribute to closing the gap between education and profession.

Research shows that the quality of the daily interactions between teachers and students appears as the most crucial variable for nurturing learning and development (Pianta & Hamre, 2009; Slavin et al., 2009; Haerens et. al., 2013). This learning enterprise in schools has been described with several terms, such as learning environments (Fraser, 1998; Moos, 1979; Wolf & Fraser, 2008; Wubbels & Brekelmans, 2005), school climate (Cohen et al., 2009; Collie et al., 2012; Loukas & Murphy, 2007), classroom climate (Ambrose et al., 2010; Gillen et al., 2011; Johnson & Johnson, 2002), and motivational climate (Ames, 1992; Fraser & Walberg, 2005; Pintrich & Maehr,

2004). Most research on the learning climate has attempted to identify current learning characteristics, which turns out to be important for social and academic learning (Allen et al., 2013; Pianta, 2017; Hattie, 2009). The Teaching Through Interactions (TTI) framework from Hamre and Pianta (2007) categorizes the interactions between teacher and student in three major domains: instructional support, classroom organization, and emotional support. This theory frame has been empirically supported (Havik & Ertesvåg, 2018; Pianta et al., 2012), and it can be considered as a system for conceptualizing, organizing, and measuring classroom interactions.

The introduction to the Norwegian curriculum (Utdanningsdirektoratet, 2020) stipulates that physical education (PE) is an important subject that should stimulate a lifelong joy of movement and physically active lifestyle. This guidance points out the importance of stimulating long-term motivation in the perceived learning climate in PE. The motivational climate refers to the collective perception of the situational achievement goal structure and is predominantly mastery or performance oriented (Ames, 1992; Treasure et al., 2001). Further, the teacher is the major source establishing and nurturing the motivational climate (Ames, 1992; Halvari et al., 2011; Ommundsen & Kvalø, 2007). If the students are supposed to achieve the learning objectives (Utdanningsdirektoratet, 2020), perception of a mastery-oriented climate is preferable (Ulstad et al., 2020).

On the basis of the former, we defined a facilitating learning climate in PE as a learning context in which, in response to students' individual needs and requirements, the teacher provides instructional and emotional support that stimulates the students' learning and mastery outcomes and experience of participation and belonging in a positive class community. Establishing a facilitating learning climate is a core teaching competence, and students evaluating newly educated PE teachers should therefore perceive their learning climate as high in (a) instructional and emotional support, (b) classroom organization, (c) and mastery climate, and low on performance climate.

Instructional Support

Instructional support embraces all teacher behavior that enhances learning, including consistent, process-oriented feedback, a focus on

higher-order thinking skills, and presentation of new content within a broader, meaningful context (Pianta, Hamre, & Mintz, 2012). Effective teachers intend to provide variety and novelty in modes of content presentation and types of learning activities (Cotton, 2000; Wenglinsky, 2000) to maximize learning opportunities. Teachers' effective instructional strategies are a vital component in the learning process. The strategies in PE class can be consequently planned, assessed, and carried out by the teacher so students acquire basic motor skills (Lysniak, Gibbone & Silverman, 2019), which may in turn build a foundation for participating in lifelong physical activity (McKenzie & Lounsbery, 2014). Considerable evidence shows that variables in effective instruction such as time on task, appropriate practice trials, clarity, class structure, accountability, and skill progression have a positive effect upon motor skill acquisition (Lysniak et al., 2019; Silverman et al., 1995).

In recent years, an increasing number of studies have documented that feedback is among the actions that have the greatest impact on students' learning outcomes (Black & Wiliam, 1998; Hattie, 2009; Pellegrino et al., 2001). According to Sadler (2010), successful feedback includes telling the students what would have improved their works and pointing them to what could be done the next time they complete a related task. This practice has been recognized as part of an assessment for learning in the literature (Wiliam, 2011). For PE, this means that teachers' presentation of motor and physical competence goals becomes essential and that students receive specific feedback related to their performance on relevant exercises. Furthermore, the teacher must provide appropriate feedback, helping the students to master relevant tasks. This includes pointing out the vital parts of a motor skill and then providing appropriate practice trials. Teachers' formative learning behavior is crucial to enhancing students' learning outcomes (Crum, 2013; Kirk, 2009). According to Hamre and Pianta (2007), formative teaching behavior is characterized by clear and frequent instruction, concise feedback related to the students' work, and students who take responsibility for their own learning.

Classroom Organization

Classroom organization is a broad domain of classroom processes related to the organization and management of students' behavior, time, and attention in the classroom (Emmer & Stough, 2001).

Classrooms function best, and provide the most opportunities to learn, when students are well behaved, consistently have things to do, and are interested and engaged in learning tasks (Grube et al., 2018). The term "self-regulated learning" (Schunk, 2005) often refers to the regulatory skills in classrooms. It is "an active constructive process whereby learners set goals for their own learning and then attempt to monitor, regulate, and control their cognition, motivation, and behaviour, guided and constrained by their goals and the contextual features in the environment" (Pintrich, 2000, p. 453).

It is important that teachers involve the students in their own learning by creating reflection and responsibility for the students' choices (Chang et al., 2016). For this to occur, a regular (every week) dialogue between teacher and student is required. Furthermore, the mandatory development dialogue can make an important contribution in that respect (Regulation to the Education Act, 2020, § 3-7). The development dialogue is understood as planned conversations between teacher and student in which both an academic focus and a social focus are emphasized.

In PE, however, the teacher faces special challenges. Teaching takes place in a wide variety of settings, such as outdoors or in pools and gymnasiums, with high noise levels and physical contact among students. These factors impose strict demands on the teachers' ability to organize, and according to Chepyator-Thomson and Liu (2003), class management in PE may be more difficult than that in the classroom. A final unique context challenge for PE teachers is the distribution, use, and collection of equipment that requires significant management skills (Cothran & Kulinna, 2015). Not only is the environment different, but also the product of instruction is often a motoric rather than cognitive skill (Silverman et al., 1988). It is important that procedures and routines are developed that will be constant throughout the school year (Cothran & Kulinna, 2015). Once expectations are set, and teachers are clear on procedures, they can maximize their time for motor learning (Grube et al., 2018). Kelder et al. (2003) points out that one third of class time in PE is spent on instructional or management tasks. In line with this finding, several other studies question the preparation for class management during PETE programs (Cothran & Kulinna, 2015; Hill & Brodin, 2004). Despite the importance of classroom organization,

little information is available about how students experience management and organization during PE.

Emotional Support

Students' social and emotional functioning in the classroom is an indicator of school success (Greenberg et al., 2003; Zins et al., 2007). Schools that successfully engage students promote a sense of belonging by personalizing instruction, showing an interest in students' lives, and creating a supportive, caring social climate that will facilitate school success (Allen et al., 2002; Ryan & Deci, 2000). Thus, regardless of age or grade, emotional support from teachers is essential to the promotion of students' development (Pianta, Hamre, & Allen, 2012).

A caring relationship between teachers and students can enhance the possibility of students engaging in PE (Larson, 2006). Self-determination theory (Deci & Ryan, 2008) proposes that social factors, such as teachers' interpersonal style, can influence students' motivation and engagement by nurturing versus thwarting three basic psychological needs. These are the needs for autonomy, competence, and relatedness (Tessier et al., 2010). Ensuring that students perceive that they have adequate opportunity to develop competencies, self-direct behaviors, and be connected to others is therefore of paramount importance (Curran & Standage, 2017). The importance of emotional support in educational settings compels teachers to make efforts to enhance their understanding of the emotional aspects of students' learning to improve their confidence in their interaction with students and to approach behavior incidents in a considered manner (Lu & Buchanan, 2014).

The unique nature of the PE discipline, in which students are exposed to physical motor challenges that can disclose a lack of competence, requires a conscious teacher behavior emphasizing social relatedness. Every student gains experience in PE that can be both positive and negative, for example, related to situations of mastering or failing. However, it is important that teachers build a basis of positive experiences in PE to support students' motivation and confidence (Leisterer & Jekauc, 2019). A crucial part of PE is increasing students' commitment to physical activities and sport in a lifelong perspective (MacNamara et al., 2011; Green, 2014; Utdanningsdirektoratet, 2020). Consequently, it is therefore

important for teachers to understand students' emotional experiences in PE (Leisterer & Jekauc, 2019). Building relationships and caring teaching can lead to increased inclusion, social justice, and enhancement of equitable outcomes for all students in PE (Moen et al., 2019).

Motivational Climate

Because PE lessons are achievement situations, where the demonstration of ability, standards of excellence, and performance evaluations are apparent and salient (Duda, 1993), one way to evaluate this type of teaching approach is to draw on social cognitive theories of achievement motivation, namely, achievement goal theory (Ames, 1992; Nicholls, 1984). This framework suggests that variations in achievement behavior are the result of different achievement goals pursued by individuals in achievement situations (Halvari et al., 2011; Ommundsen & Kvalø, 2007). A mastery-oriented climate is related to the belief that effort and ability are causes of success, greater feelings of satisfaction, and a more positive attitude toward PE, and the belief that learning is important (Morgan & Carpenter, 2002). The various activities and tasks presented are designed to be optimally challenging, and mistakes are regarded as an integral part of the learning process (Ames, 1992; Papaioannou, 1995). In contrast, a perceived performance climate is related to social comparison and the belief that ability leads to success, in which the outcome is valued above effort and mistakes are punished. According to Treasure et al. (2001), goal orientations do not exist at opposite extremes of a spectrum but can coexist to a different degree at the same time, indicating that students can perceive the motivational climate as both mastery oriented and performance oriented.

Research Question

The literature indicates that the four major domains—emotional support, classroom organization, instructional support, and motivational climate—constitute core dimensions of a learning climate in PE. However, to the best of our knowledge, there is a lack of knowledge on students' perception of the learning climate that newly educated teachers establish in the PE, and this study aims to contribute to closing this knowledge gap.

On the basis of an expectation of higher learning pressure in the lower secondary school, due to the fact that introduction of marks takes place in the eighth grade in Norwegian schools, it was of interest whether this would be reflected through different perceptions of learning climate among primary students (5th–7th grade) versus lower secondary students (8th–10th grade).

In a recent study, Laxdal et al. (2020) examined whether there were any intersexual differences in the upper secondary school students' perceptions of their learning climate. Congruent with Kim et al. (2000) and Koul et al. (2012), Laxdal et al. (2020) found gender-related differences. These results align with other findings that males and females perceive various aspects of the PE experience differently (e.g., Couturier et al., 2007; Lentillon et al., 2006; Nicaise et al., 2006). In this study, we wanted to examine whether this is reflected through different perceptions of learning climate among girls versus boys.

The research question was "How do students experience the learning climate established by newly educated PE teachers in terms of (1) instructional support, (2) classroom organization, (3) emotional support, and (4) motivational climate?" In addition, based on core content in the PETE program, the following hypotheses were put forward for testing:

- The learning climate established by newly educated PE teachers is perceived equally by primary and lower secondary students.
- The learning climate established by newly educated PE teachers is perceived equally by male and female students.

Method

Procedures and Participants

To find subjects for this survey, we contacted former PE students (by mail and phone) who had completed their studies during the last 3 years. Of these, 15 students reported that they were teaching PE. Seven of these newly qualified teachers accepted the inquiry. Students in their classes were invited to fill out a paper–pencil questionnaire. The participants were 282 children and adolescents (127 females and 144 males, 11 gender not specified; M_{age} = 12.41, SD = 1.68, range = 10–15 years) attending seven different schools situated in

Rogaland districts of Norway. Informed consent was obtained from parents, and students had an opportunity to choose not to take part.

The participants were informed that the questionnaire was anonymous and were reassured that their responses would not be available to their teachers or parents. Students were asked to evaluate the learning climate in their PE class via a multisection inventory containing many previously used scales. Items were translated into Norwegian and checked through the backward translation technique (International Test Commission, 2017). One of the investigators distributed the questionnaire and was on hand to help if any questions about wording and/or meaning were raised. We emphasized that we were interested in students' opinions and feelings connected to PE class and that there were no right or wrong answers. The inventory took approximately 30 min for students to complete. A pilot survey was conducted to check for language bias as well as internal consistency in all subscales.

Measures

Instructional Support

For assessment of learning support, nine items were devised for use in this study. The learning support subscale was supposed to assess how students experience their PE teachers' support toward learning outcomes. These items were rooted in the Regulation for Meaningful Assessment (Hopfenbeck, 2014). Subjects answered items such as "The PE teacher is concerned about our learning outcome of new skills" on a Likert-scale from 1 (*never*) to 6 (*always*).

Classroom Organization

Concerning teaching effectiveness, participants were asked whether the class seemed to be planned and thoughtful, where learners know what to do. A six-item subscale has been developed in the Centre for Learning Climate at the University of Stavanger, and this was modified regarding the PE context by our research team. The Subscale of Organization has never been published, but it seems to be functional in a Norwegian school context. Responses were on a 6-point Likert-scale (1 = *never*, 6 = *always*). An example of items includes "The PE teacher makes sure that we get started quickly with what we are going to do."

Emotional Support

How students experience their PE teachers' emotional support was measured with subscales from previous studies. Items for emotional support showed acceptable internal consistency in an investigation among 950 British secondary school students (Standage et al., 2005). Preceded by the stem "In this PE class," responses were indicated on a 7-point Likert-scale from 1 (*strongly disagree*) to 7 (*strongly agree*). An example of the items includes "We feel that the PE teacher cares about us."

Motivational Climate

The Norwegian version of the Perceived Motivational Climate in Sport Questionnaire (PMCSQ), including items measuring task mastery (9 item) and performance (11 items) orientation, was utilized. Subscales were previously used among 148 Norwegian university students experienced in team sport (Roberts & Ommundsen, 1996). Subjects marked their answers on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Examples of items include "Students are afraid to make mistakes" or "Progress of each student is important."

Data Analysis

Initially, descriptive statistics for all variables and subscales were computed in SPSS Statistics for Windows 21. Concern regarding the distribution of the scores arose during the scanning of skewness and kurtosis values. The kurtosis and skewness values are too sensitive with large samples (Pallant, 2010), and consequently the distribution was assessed through the test of normality (Tabachnik & Fidell, 2007). Significant values in Kolmogorov-Smirnov statistics suggested a violation of the assumption of normality (Pallant, 2010). Therefore, an independent samples *t* test (Mann–Whitney *U* test) was applied. Effect size was calculated as the *z* divided by the square root of the total number of cases and was considered small at .1, medium at .3 and large at .5 (Cohen, 2013). Internal consistency was assessed through calculation of Cronbach's alpha values, with values ranging between .71 to .87, showing satisfactory internal consistent in all included subscales.

Results

Table 1 shows the descriptive statistics. All TTI parameters showed a score above the arithmetic mean. The instructional support

Table 1
Descriptive Statistics for All Subscales

Subscale	Missing	Range	*M*	*SD*	Lower CI 95%	Higher CI 95%	Cronbach's α
Emotional support (*N* = 269)	13 (5%)	1-7	6.41	0.77	6.32	6.51	.87
Instructional support (*N* = 253)	29 (11%)	1-6	4.89	0.87	4.79	5.00	.86
Classroom organization (*N* = 268)	14 (5%)	1-6	5.43	0.65	5.35	5.50	.84
Performance climate (*N* = 250)	32(13%)	1-5	2.17	0.67	2.09	2.26	.82
Mastery climate (*N* = 251)	31(12%)	1-5	3.97	0.56	3.90	4.04	.71

Note. CI = confidence interval.

score was 4.89 (range 1–6), which corresponded to 81.5% of the max score. The classroom organization score was 5.43 (range 1–6), which corresponded to 90.5% of the max score. The emotional support score was 6.41 (range 1–7), which corresponded to 91.6% of the max score.

The mastery climate (range 1–5) score was 3.97, which was higher than the arithmetic mean. The performance climate (range 1–5) score was 2.17, which was lower than the arithmetic mean.

Table 2 reveals the results from the Mann–Whitney *U* test. The results showed significant differences ($p < .05$) between primary school and lower secondary school students for all the TTI factors. The study did not reveal differences in perceived motivational orientation between primary school students and lower secondary school students.

Table 2
Perceived Learning Climate Differences Between Primary School and Lower Secondary School Students

Subscale	*Mdn*	*U*	*z*	*p*	ES
Emotional support (Range 1–7)					
Primary school (*n* = 158)	6.60	7388.00	-2.24	.025*	-.14
Lower secondary school (*n* = 111)	6.80				
Instructional support (Range 1–6)					
Primary school (*n* = 146)	5.00	6179.00	-2.84	.004*	-.18
Lower secondary school (*n* = 107)	5.25				
Classroom organization (Range 1–6)					
Primary school (*n* = 160)	5.50	6840.50	-2.92	.003*	-.18
Lower secondary school (*n* = 108)	5.67				
Performance climate (Range 1–5)					
Primary school (*n* = 146)	2.00	6494.50	-1.95	.051	
Lower secondary school (*n* = 104)	2.14				
Mastery climate (Range 1–5)					
Primary school (*n* = 148)	4.00	7591.00	-0.06	.956	
Lower secondary school (*n* = 103)	4.00				

Note. *U* and *z* are nonparametric test values regarding the Mann–Whitney *U* test. Effect size calculated as *z* / square root of total number of cases.

*$p < .05$.

Table 3 reveals the results from the Mann–Whitney *U* test. There were significant differences ($p < .05$) between females and males on all the dependent variables related to the TTI framework. Both sexes scored above the arithmetic mean, and females scored significantly higher than males. There were not differences in perceived motivational orientation between females and males.

Table 3
Perceived Learning Climate Differences Between Females and Males

Subscale	*Mdn*	*U*	*z*	*p*	ES
Emotional support (Range 1–7)					
Females ($n = 122$)	6.80	6785.00	-2.57	.010*	-.16
Males ($n = 136$)	6.60				
Instructional support (Range 1–6)					
Females ($n = 116$)	5.25	5954.50	-2.58	.010*	-.17
Males ($n = 127$)	5.00				
Classroom organization (Range 1–6)					
Females ($n = 123$)	5.67	5937.50	-3.91	.000*	-.24
Males ($n = 134$)	5.50				
Performance climate (Range 1–5)					
Females ($n = 112$)	2.00	6652.50	-0.86	.388	
Males ($n = 127$)	2.09				
Mastery climate (Range 1–5)					
Females ($n = 112$)	4.00	6714.00	-0.85	.396	
Males ($n = 128$)	4.00				

Note. *U* and *z* are nonparametric test values regarding the Mann–Whitney *U* test. Effect size calculated as *z* / square root of total number of cases.

*$p < .05$.

Discussion

The purpose of this study is to investigate which kind of learning climate students perceive that newly educated PE teachers are establishing. To our knowledge, there has been no establishment of a cut value on the subdimensions that classify the learning climate as positive or negative. However, mean values significantly above the arithmetic mean on the subdimensions instructional support,

classroom organization, and emotional support substantiate that students interpret as positive the climate the newly educated PE teachers create. The mean values on the motivational inventory confirm this impression with the students perceiving a predominance of mastery climate in the teaching (3.97 and above the arithmetic mean) and low performance-oriented climate (2.17 and below the arithmetic mean). This average value for perceived mastery climate is high among Norwegian students (Halvari et al., 2011; Ommundsen and Kvalø, 2007; 3.78 and 3.59, respectively). Moreover, the average of perceived performance climate is low among Norwegian students (Halvari et al., 2011; Ommundsen and Kvalø, 2007; 3.26 and 2.18, respectively). Because a mastery climate is associated with adaptive, cognitive, and affective behavioral responses, and because a performance-oriented climate is too worrying and produces tension, anxiety, pressure and decreased interest (Jaakkola & Digelidis, 2007), high mastery orientation and low performance orientation are beneficial for students' learning (Ommundsen & Kvalø, 2007; Ulstad et al., 2020). Altogether, these results show that students perceive as strongly beneficial newly educated PE teachers' evaluation of their learning climate. In the PE curriculum (Utdanningsdirektoratet, 2020), the specific learning outcomes are formulated broadly as "competence aims." The main goal points students to take part in a lasting and satisfying movement culture characterized by the development of movement competency and a healthy lifestyle. With student diversity—different needs, interests, and prerequisites—it seems natural that students have different goals and perceive learning climates differently. Despite these different premises, the results indicate that students of newly educated teachers have (little variation) favorable perceptions of the established learning climate.

Despite high scores on classroom organization, emotional support, and instructional support, the significantly lower score on the latter dimension indicates that students receive lower levels of instructional support compared with emotional support and classroom organization. However, lower levels of instructional support seem to be a more generic phenomenon with observational data of a wider spectrum of teaching subjects and professional experience revealing lesser levels of instructional support (Mjåtveit & Giske, 2017; Pianta, Hamre, & Mintz, 2012; Westergård et al., 2018).

Criticism points to PE being an activity subject rather than a clear learning subject (Annerstedt, 2008; Crum, 2013). Moreover, few PE teachers give priority to the proposition that a physical educator's primary function is to help students learn (Ommundsen, 2013). On the basis of students' perception of the teaching of newly educated teachers, there seems to be a considerable amount of instructional support that contradicts Annerstedt's (2008), Crum's (2013) and Ommundsen's (2013) criticism for the absence of learning orientation in PE. Official statistics from Norway reveal that nearly 50% of the teachers teaching PE in primary and secondary school have no formal education (Perlic, 2019). This fact entails expectations toward various nonteaching practices (Crum, 2013; Ommundsen, 2013), which also indicates that previous reasoning excluded teaching education as an important premise or moderator in the evaluation of teaching behavior in PE. Another interpretation is that criticism from Annerstedt (2008), Crum (2013), and Ommundsen (2013) has led to a stronger learning orientation among stakeholders in the PETE program. Teacher educators play a major role in facilitating the reflective learning process student teachers need to go through (Smith, 2005), and high-quality PETE can strengthen teaching orientations (Pike & Fletcher, 2014; Mordal-Moen & Green, 2014). Results of this study support that the PETE program has accommodated this to some extent.

Lower levels of instructional support do not necessarily indicate a lack of learning focus or engagement by teachers but are perhaps rather an indicator that the student is unmotivated and therefore unreceptive to instructional support. Therefore, the teacher's strong emphasis on emotional support may be an important contribution to motivating the student, thus paving the way for the student to become receptive to instructional support. The level of instructional support during teaching is therefore probably not necessarily a teacher competence that can be evaluated independently of other pedagogical prerequisites in the context.

The consideration of PE as a recreational subject, and the fact that national curriculum emphasizes that PE also should stimulate a lifelong joy of movement, can explain why it thus possibly directs the teacher's focus toward supporting the student's well-being through encouragement to participate. The student will probably experience

this as emotional support. For newly educated teachers, there is a strong positive correlation between teacher efficacy and job engagement (Høigaard et al., 2012). A high level of social support can be an expression of high job engagement and one way for the teacher to establish a positive relation to the students and ensure that the students like the teacher. The teacher perception of student social appreciation therefore becomes an important criterion in defining successful teaching and building teacher efficacy among the newly educated.

The students' perception of their PE teachers as skilled classroom organizers in this study is congruent with findings in studies that show PE teachers today focus on maximizing students' activity time and eliminating unwanted management time (Rink, 2010; Wong et al., 2009). Earlier findings suggest a significant relationship between teaching experience and the teacher's ability to perceive and describe interactions and events in the classroom accurately (Hogan et al., 2003). Thus, newly educated teachers may perceive classroom events in terms of the actions of a teacher, whereas experienced teachers realize the importance of observing both student actions and teacher actions to represent classroom dynamics. This is consistent with studies showing that newly educated professionals tend to govern their practices with rule-oriented behavior (Benner & Tanner, 1987; Dreyfus et al., 1987). Because newly educated teachers have little experience with real situations, they must rely on the rules they have learned in their education to function. This is support for this in studies describing newly educated teachers as preoccupied with surviving and delivering their lesson plans, in contrast to attention toward the learning of their students (Maynard & Furlong, 1995; Richardson & American Educational Research Association, 2001). However, the results from the this study seem to contradict these findings with the teachers scoring high on both organization and instructional support.

Because the newly educated PE teachers completed the same PETE program, we expected that they would establish an approximately similar learning climate independent of teaching primary and lower secondary students. In addition to illuminating which kind of learning climate newly educated teachers establish, we therefore tested the hypothesis "The learning climate established

by newly educated PE teachers is perceived equally by primary and lower secondary students." The results in Table 2 partly confirm this hypothesis with no significant differences in perceived motivational climate between primary students and lower secondary students. However, the lower secondary students' significantly higher score on instructional support, organization, and emotional support seems to contradict previous results that Norwegian students show teacher support decreasingly with age (Bokhorst et al., 2010; Bru et al., 2010; Ertesvåg & Vaaland, 2007).

In Norwegian schools, the transition from primary school to lower secondary school entails a change in the form of assessment. At the lower secondary level, the use of grades is introduced (Utdanningsdirektoratet, 2020). It is natural to believe that this prompts an increased focus on instructional support, which is also emphasized in our study. Furthermore, it is reasonable to expect that this will be decisive for the motivational climate through an increased performance climate, but this is not apparent in this study.

Several studies indicate that primary students experience the greatest degree of emotional support (Kikas & Mägi, 2017; Wentzel et al., 2010). However, our study shows an opposite trend, with higher perceived emotional support among lower secondary school students. The difference between previous findings and our results may be due to methodological aspects or a strong focus on emotional support in Norwegian PETE.

Over the last four decades, there has been an increased focus on gender issues or how females experience PE based on an equality perspective (Flintoff & Scratton, 2005). This debate should be reflected in PETE and therefore we tested the hypothesis "The learning climate established by newly educated PE teachers is perceived equally by male and female students." The results in Table 3 partly confirm the hypothesis with no significant differences in perceived motivational climate between females and males. A critical indicator of equal treatment toward males and females is the teacher's emphasis on mastery orientation (Papaioannou, 1998). The results in Table 1 show a high level of mastery climate and therefore support this assumption. However, in line with the findings of Kim et al. (2000), Laxdal et al. (2020), and Koul et al. (2012), this study also points out gender-related differences in the students' perception of the learning

climate. Table 3 shows that females significantly perceive higher levels of instructional support, organization, and emotional support, which indicates an opposite tendency to the expected result. These findings are surprising given national and international studies that point out that males dominate in the PE lessons, master the activities better, and are more satisfied with the content in PE (Kaj et al., 2015; Walseth et al., 2017). A possible explanation for this finding may be the recent years' reforms in PE, which are hopefully reflected in the PETE program. This includes teaching with a reduced focus on sports discourse, more attention to learning, and fewer physical tests, which have potentially contributed to a topic that appeals to females to a greater extent than before.

Limitations and Strengths

This study is not without its limitations, and these issues should be considered in interpretations of the findings. Questions can be raised concerning the generalizability of the study as the participants were recruited from a constrained school district. We contacted 15 newly graduated PE teachers to find subjects for this survey, but only seven accepted the inquiry. This could result in a biased sample.

Second, this study does not consider the possibility that teachers may provide different levels and quality of support to different students. It also does not consider that students' perceptions may be influenced by special experiences close to the data collection.

A possible strength of this study is the combination of the TTI framework and the motivational climate scale as core dimensions in constituting the term "learning climate." By combining the TTI items and the motivational climate scale, we created a more complementary picture of the concept of learning climate. Furthermore, the student perspective—illuminating the students' perception of the learning climate facilitated by newly educated PE teachers—has been, to the best of our knowledge, deficiently investigated. This study could help to close this knowledge gap. Finally, use of the same researcher in all classes to distribute the questionnaire and assist the students with any questions about the survey strengthened the reliability of this study.

Practical Implications and Future Research

The relatively favorable score on students' perceived learning climate in PE in this study, compared with findings by Halvari et al. (2011) and Ommundsen and Kvalø (2007), may mean that the recent years' reforms in PE and PETE with an increased focus on a mastery-oriented learning climate have an effect on students' experience of the subject. However, there is still a need for stronger efforts related to facilitation of the learning climate. For PETE, this means an increased focus on four major domains: emotional support, classroom organization, instructional support, and motivational climate. These should not be treated as isolated but must be considered in context. Furthermore, in line with Moen's (2011) concern over persistent content-focused pedagogy prioritizing skills and technique-based instruction, we recommend a stronger emphasis on alternative movement activities and learner-centered pedagogy, which opens for more students, regardless of gender, to achieve the subject's purpose of participating in lifelong physical activity (McKenzie & Lounsbery, 2014).

However, further research can uncover the PETE program's effect on the learning climate in PE. This would preferably involve longitudinal surveys that provide insight into competence development in teachers and the importance of class composition, as well as cross-sectional surveys that clarify any differences between newly qualified and established teachers. Both teacher perspectives and student perspectives are relevant.

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