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RECEIVED 19 May 2025
ACCEPTED 04 August 2025
PUBLISHED 15 August 2025

CITATION
Bjørklímárk I and Lagestad P (2025)
Importance of being seen as a pedagogical
approach among physical education
teachers at a lower secondary school - an
intervention case study.
Front. Educ. 10:1631248.
doi: 10.3389/feduc.2025.1631248

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Importance of being seen as a pedagogical approach among physical education teachers at a lower secondary school - an intervention case study

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Introduction: The concept of “being seen” is an educational term used in Norway related to the students feeling of being recognized and acknowledged by their teacher, yet its effects have not been experimentally studied. An empirical study pointed towards five factors that define students’ experience of being seen: The experience of their PE teachers caring, feedback, dialogue, and the opportunity for students to show their skills and being included in goal setting and evaluation in PE. This study aimed to investigate the impact of an intervention program designed to train physical education (PE) teachers in the concept of being seen.

Methods: Six PE teachers and their students from a lower secondary school in Mid-Norway participated, with three teachers and their 68 students forming the control group, and three teachers and their 116 students forming the intervention group after random selection. A validated questionnaire assessing students’ perceptions of teacher care, feedback, dialogue, and opportunities to showcase skills was administered before and after a volleyball lesson. Following the initial lesson, intervention group teachers attended a course focusing on these four factors and applied them in a subsequent lesson. Data from 129 students (50 control, 79 intervention) were analyzed.

Results: The results indicated significant differences in the intervention group compared to the control group in terms of maintaining the students’ experiences of teacher’s feedback, dialogue, and students’ ability to demonstrate skills. The intervention group showed slight increases in these factors, while the control group experienced decreases.

Discussion: These findings suggest that incorporating the concept of being seen into PE teaching practices can positively influence student experiences, and that teacher education should implement the concept in their teaching.

KEYWORDS

being seen, students, intervention, feedback, caring, dialog

Introduction

School is an arena where one initially can reach all children and youth by giving all students equal opportunities for learning and development regardless of their prerequisites. The students' academic competence should provide a picture of what the students know, and the Knowledge Promotion of 2020 also points to the importance of students participating and taking co-responsibility in the learning community together with the teacher. Physical education (PE) is a large subject that follows students throughout primary and secondary school. One of the purposes of PE is to inspire children and young people to lead a physically active lifestyle, and an important goal for the school is to facilitate lifelong joy of movement. Unfortunately, a larger proportion of students do not enjoy PE. In a study by Säfvenbom et al. (2014), it is reported that 12% do not like PE and 32% do not like the way PE is conducted. It is concerning that children and youth do not like PE, as dissatisfaction can contribute to a greater degree of inactivity. Research has shown that those who are inactive as children often remain inactive as adults (Telama et al., 2014). The risk of lifestyle diseases increases with inactivity. Reduced physical activity increases the risk of being overweight, obesity, type 2 diabetes, cardiovascular diseases, high blood pressure, musculoskeletal disorders, and certain types of cancer (Bryan and Katzmarzyk, 2011; Helsedirektoratet, 2019; Marques et al., 2018).

We argue that if students feel seen and acknowledged by the PE teacher, it can lead to more students developing a positive relationship with physical activity. This will be beneficial in the long term, but also for achieving the goals central to the school. According to the use of being seen as a pedagogical approach, this study uses the findings of a previous empirical study (Andresen et al., 2023) that pointed toward five factors that constitute students' experience of being seen in PE: The experience of their PE teachers caring, feedback and dialog, and the opportunity for students to show their skills and being included in goal setting and evaluation in PE. To achieve the goals of The Knowledge Promotion, Lagestad et al. (2019) argues that the experience of being seen is essential and highlights the importance of students having a feeling of being noticed, in the form of attention. Being seen in PE is closely linked to and often seen in connection with building relationships and as part of a socialization process (Deci and Ryan, 2000; Jordet, 2020). Lyngstad et al. (2019) also points out that being seen is central to satisfying one's basic social needs. In his summary of school research, Hattie (2013, p.54) is clear about what affects students' performance in school: "The most important message is simple: What the teacher does matters." Several empirical studies have demonstrated how feedback (Hattie, 2013; Andresen et al., 2023; Berntzen and Lagestad, 2025; Lagestad et al., 2019; Lyngstad et al., 2019), caring (Jordet, 2020; Andresen et al., 2023; Lagestad et al., 2019; Lyngstad et al., 2019) and dialog (Andresen et al., 2023; Lagestad et al., 2019; Lyngstad et al., 2019) are important PE teaching for students learning. This main objective of the study is to examine whether an intervention based on the pedagogical terminology of being seen (Andresen et al., 2023) among teachers will have an impact on the students experiencing of being seen by their PE teacher. Our hypothesis is that an intervention based on the pedagogical terminology of being seen will positively influence students' experience of being seen.

Previous research related to being seen as a pedagogical term

Extensive literature research shows that to date three studies have been published that directly address the pedagogical concept of being seen (Andresen et al., 2023; Lagestad et al., 2019; Lyngstad et al., 2019). However, these studies are based on interviews and surveys and have not studied the pedagogical term being seen through an experimental approach.

In a study by Lyngstad et al. (2019), high school students were interviewed about how relationship and dialog with the PE teacher were perceived. The students were also asked about their experience of being seen by their PE teacher. The findings showed that students experience a wide range of emotions in connection with PE. The study pointed to various principles that contribute to grading the feeling of being seen. For example, respect, the experience of trust, encouraging comments, support, and other feedback. Lyngstad et al. (2019) also writes that the teacher observing the class environment is also seen as a way of caring, which further leads to the student's experience of being seen.

The study by Lagestad et al. (2019) used interviews with 26 students to study what underlies being seen in PE, and the extent to which students with low and high physical fitness experienced being seen by the PE teacher was examined. The study's findings highlighted four factors of importance for students' experience of being seen by the PE teacher: (1) that they feel the teacher cares, (2) that they receive feedback from the teacher, (3) the quality and tone of the dialog with the teacher, and (4) the experience of being able to show their skills in PE. The study also concluded that students in good physical shape are more likely to feel seen by their teacher compared to students in poor physical shape. The findings related to feedback are supported by other research that points to the importance of feedback in creating a good learning environment (Hattie, 2013; Zeng et al., 2009). A meta-analysis by Hattie (2013) showed that the effect of feedback was one of the most significant variables when it came to students' learning and development. Also, a study by Berntzen and Lagestad (2025) found that increasing the feedback to young football players increased the feeling of being seen by their coach. A study by Lagestad (2017) suggests that the number of students in a class affects the PE teacher's ability to make all students feel seen. The teacher in this study believed that the ideal number of students should be fewer than 20, as smaller groups allow for more time with each student, making them feel cared for and seen. Activities could then be more tailored for each student, and students felt more valued because they experienced being able to show their skills.

The study of Andresen et al. (2023) highlights students' experiences of being seen in PE using a questionnaire. Here, a factor analysis based on 51 questions related to factors that previous research has shown and suggested may underline students' experiences of being seen in PE is used. The factor analysis points to five factors that are significant for being seen, four of which are the same as in Lagestad et al. (2019) (caring, feedback, dialog, showing their skills), and a fifth factor related to the student's experience of being included in goal setting and evaluation.

Theoretical basis of the study

The five factors that have been empirically proven to be significant for student's experience of being seen (Lagestad et al., 2019) have in previous studies (Andresen et al., 2023; Berntzen and Lagestad, 2025; Lagestad et al., 2019; Lyngstad et al., 2019) been grounded in Jordet (2020) pedagogy of recognition, which is built on Honneth (2008), as well as Deci and Ryan (2000) self-determination theory. We argue that caring, feedback, dialog and students' opportunities to show their skills are all important aspects of both Jordet (2020) pedagogy of recognition and Deci and Ryan (2000) self-determination theory.

Jordet (2020) writes that the pedagogy of recognition involves the teachers showing respect, giving praise, and appreciating the student, thereby acknowledging the student. We will argue that this is closely connected to the pedagogical term of being seen, by caring, feedback, dialog and students' opportunities to show their skills. Social philosopher Axel Honneth (2008) has a broad approach and describes recognition as what humans need most, which builds their self-relationship and lays the foundation for the individual's free and successful self-realization and healthy psychological development (Jordet, 2020). Honneth (2008) also says that recognition involves affirming other people's positive qualities. By recognizing something or someone, it strengthens the experience of being seen, which in turn can help strengthen a person's self-worth and identity. Honneth (2008) views recognition and self-worth as a synthesis and the foundation for an individual's self-worth. Experiences of recognition in all three spheres of life – love in the private sphere, rights in the public sphere, and social appreciation in the social sphere – are necessary conditions for the development of a healthy and secure self-worth.

Jordet (2020) points out that love forms a foundation in the individual. The basis for building relationships in life is built on the love experiences the child has had at an early stage in life. Love plays out face-to-face between people who are close to each other and have a bond, as PE teachers can have with their students (Lagestad et al., 2019). Honneth (2008) also calls it care when one values the other as a whole person with feelings and needs, with moral dignity, and with various qualities and abilities. Love as a form of recognition is very important in the practice of teaching, claims Jordet (2020). Love - in the teacher-student relationship is when the teacher meets the students with a fundamental attitude of care, warmth, and empathy, and where the goal is the student's best interest, regardless of what the teacher personally feels for the student. Linked to this are the concepts of "agape" and "storge." Agape is about love for others based on respect for others, with the needs of the other at the center. Storge concerns the teacher's role as a caregiver. In addition to showing care, warmth, and empathy, a teacher should also challenge, correct, and at times set boundaries, encourage, and cheer on. A combination of agape and storge can be regarded as the most beneficial teacher role.

According to Jordet (2020), the form of recognition as rights is based on the idea that all people are equally valuable, regardless of gender, social status, ethnicity, religion, disability, or similar factors. Recognition as rights concerns people's need to feel respected with rights and duties in public. Recognition as love and rights is about who the person is, as opposed to social appreciation, which is about when someone is valued for their contributions in social communities.

Deci and Ryan (2000) point to competence, autonomy, and relatedness as basic psychological needs that people depend on being satisfied to function and develop, and to create relatedness between the PE teachers and their students, caring, feedback and dialog are important strategies. The need for relatedness is largely about a sense of positive relationships and a feeling that others care. Relatedness can be closely linked to the social aspect and thus also be an important part of being seen. Students will feel a greater sense of belonging if they experience support from the teacher. In this way, support from the teacher can also be seen in connection with and related to the feeling of being seen in the sense that the teacher cares.

As mentioned, thorough literature research shows that three studies have been conducted related to the pedagogical term being seen (Andresen et al., 2023; Lagestad et al., 2019; Lyngstad et al., 2019), and these are based on interviews and surveys of students' experiences of being seen. However, an experimental intervention study with an intervention group and a control group, which can be claimed to be the gold standard if one wants to highlight the effects of pedagogical approaches (Thomas et al., 2011), has not been conducted. For this reason, the research question in this study is: Will an intervention based on the pedagogical terminology of being seen lead to students experiencing being seen by their PE teacher to a greater extent? The intervention here will be a course related to the pedagogical term being seen for teachers in the intervention group.

Materials and methods

To illustrate the extent to which an intervention based on the pedagogical terminology of being seen would lead to students experiencing being seen by their PE teacher to a greater extent, an intervention was conducted with an experimental approach involving an intervention group and a control group (Thomas et al., 2011). This study was approved by the Norwegian Agency for Shared Services in Education and Research (SIKT) on 4 December 2023, with reference number 522,442. This investigation was conducted in strict accordance with local legislation and institutional requirements to ensure ethical conduct of research. According to the regulations of SIKT, parents for children under the age of 16 (and children by the age of 16) provide written informed consent permitting their children to participate in this study prior to data collection. For 10th grade, parental consent was not required, but the department head at the school still sent out information and requested consent. The consents were registered by the department head at the school and stored in the school's digital portal. Through this portal, parents and students can withdraw their consent at any time if they wish. Because of ethical considerations, the teachers in the control group were offered the same intervention program after the data collection was finished, so that the students in the control group would be able to have the same benefits as the students in the intervention group.

Participants

Using a case study with a stratified sample considering a typical Norwegian lower secondary school in relation to number,

age and gender of students and teachers, and teacher experience and education of teachers (Johannessen et al., 2016), a lower secondary school in Mid-Norway with 10 classes of 19–25 students (8th to 10th grade, 13–15 years of age) with 238 students was chosen, and all six PE teachers agreed to participate. A random selection was made among the six PE teachers, where three teachers and their respective classes constituted the control group, while the other three teachers and their respective classes constituted the intervention group. The teachers in the intervention group taught at all three grade levels, where the teachers in the control group taught at two levels. Descriptive data about the teachers are presented in Table 1.

After obtaining consent from parents, 184 students consented to participate. The criteria for exclusion of participants were the lack of valid questionnaire data at pre-test or post-test. The participants were randomly distributed based on which physical education teacher they belonged to. 66 boys and 63 girls had valid results. Of these, 25 boys belonged to the control group and 41 boys to the intervention group. The control group consisted of 25 girls and the intervention group consisted of 38 girls. The average age for the control group was 13.6 years and the average age for the intervention group was 14.4 years. The relatively large difference in average age is likely due to the control group not having any participants who were 15 years old. Both groups included students at different levels according to volleyball skills. None of the participants were involved in volleyball in their spare time. The 54 who did not consent did not respond to the request, and the reason for their lack of consent is not known.

Procedures

The students in both groups (control and intervention) completed a validated questionnaire related to the concept of being seen was used (Andresen et al., 2023) after finishing the same volleyball lesson in the first week (pre-test). After this lesson, the PE teachers for the intervention group students attended a course where they learned about the factors of being seen and were instructed to focus on these four factors in their next lesson. The students in both groups (control and intervention) completed the same questionnaire after the same volleyball lesson in the second week (post-test) (Table 2). Absence, illness, and other reasons resulted in 129 students who had participated in PE and completed the questionnaire with valid data at both pre-test and post-test (50 students in the control group, 79 students in the intervention group).

Instrument

The questionnaire used in the study has previously been used and has been validated by Andresen et al. (2023). Questions related to the fifth of the four factors; goal setting and evaluation, were removed as it was concluded that a longer intervention period is needed to measure the effect of goal setting and evaluation. As a result, 32 of the questions used by Andresen et al. (2023) were used in this study (Table 1). The questions covered the four factors related to the pedagogical term being seen found in previous

research (Andresen et al., 2023; Løgestad et al., 2019; Lyngstad et al., 2019), with eight questions related to feedback, 10 questions related to caring, five questions related to dialog, and eight questions related to showing their skills (Andresen et al., 2023). A seven-point Likert scale was used in the questionnaire, where students were asked to respond to various statements related to being seen (Table 3). The seven-point Likert scale ranged from most negative on the left to most positive on the right (strongly disagree, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree, agree, and strongly agree).

Intervention program

All classes were to complete the same volleyball session at both pre-test and post-test. Table 4 provides an overview of the different phases and time involved in the implementation from the first volleyball session to the collection of the post-test questionnaires for all classes.

In phase 1, all classes completed a planned volleyball session (Table 5) in a PE class lasting 90 min, including locker room time, and completed the questionnaire described in Table 3 immediately after the session (pre-test) in the sport hall they had had the volleyball session or in a classroom. The first author was present during the lessons and provided a good opportunity to observe the teachers during the session. The observations showed that several of the teachers were initially good at giving the students the experience of being seen. The first author organized and distributed the questionnaires, answering any questions the students had. The actual completion took between 5 and 12 min. The data collection took over 5 days to complete with all classes. A digital presentation was prepared and presented to the three teachers in the intervention group by the first author. The first author has a master's degree in physical education and developed the program related to the research findings in the three articles related to being seen as a pedagogical approach (Andresen et al., 2023; Løgestad et al., 2019; Lyngstad et al., 2019) highlighting the four factors: caring, feedback, dialog, and showing their skills. There was also a discussion about what teachers should focus on to make students feel seen. Questions such as: "What is good dialog?" "How to show students that we care?" "How to organize the physical education session so that everyone feels they can show their skills?" were some of the questions discussed. In the discussion section, the teachers shared experiences and provided examples of how they usually solved the problem, as well as suggestions on how to further improve so that the students feel more seen. Some of the teachers also commented in conclusion that if one can follow all the points mentioned, they will be the perfect teacher.

This teaching session with the PE teachers lasted one hour and was conducted in what has been called phase 3, on day 8 of the data collection period (Table 4). The teachers who were not selected and belonged to the control group did not receive this introduction and were not informed about what the teachers in the intervention group had been presented with. The students who belonged to the intervention group did not know that their teachers had received extra training. At

TABLE 1 Descriptive data about the teachers in the control group and intervention group.

	Gender	Age	Education level	Education in physical education	Teaching experience
Teacher 1 control group	Female	33	Bachelor	15 ECTS cr.	5
Teacher 2 control group	Female	34	Bachelor	60 ECTS cr.	10
Teacher 3 control group	Female	38	Bachelor	60 ECTS cr.	15
Teacher 1 intervention group	Male	25	Master	150 ECTS cr.	2
Teacher 2 intervention group	Female	28	Master	120 ECTS cr.	1
Teacher 3 intervention group	Female	34	Master	60 ECTS cr.	9

TABLE 2 Distribution of participating students per group and grade, as well as the number of valid participants (N).

		8 th grade	9 th grade	10 th grade	Total
Pre-test	Control group	21	38	0	59
	Intervention group	33	14	60	107
	Total	54	52	60	166
Post-test	Control group	22	33	0	55
	Intervention group	24	14	54	92
Valid	Control group	–	–	–	50
	Intervention group	–	–	–	79

the post-test, all classes completed a similar volleyball session (Table 6), where the questionnaire was also to be filled out at the end of the session. The first author was present and observed this session. During this session, several moments were observed that were addressed in an appropriate manner and that corresponded more closely with previous research on how to give students the feeling of being seen. Also, here the first author organized was present and distributed the questionnaires, answering any questions the students had. The actual completion took between 5 and 12 min. The students did not take part in volleyball training between the measurements that could affect the results. Initially, all classes were to complete this volleyball session, including the post-test questionnaire, 2 weeks after the pre-test (days 15–19), but due to the PE hall being suddenly occupied and one of the teachers being on sick leave, 2 of the classes had to postpone the post-test by 2 weeks (to days 31–33). In all, the experimental approach involved two volleyball sessions (organized in the same way, see Table 5) in each group, with collection of questionnaire data after the first (pre-test) and the second session (post-test).

Statistical analysis

To illustrate the effect of the intervention, a change variable was created for each of the four factors (caring, feedback, good dialog, show their skills) by creating four new variables. Means of the items of each dimension (see Table 3) were divided by the number of questions and then subtracting the pre-test from the post-test. According to Field (2018) the sample size for the data is suitable for factor analysis. The confirmatory factor analyses (principal components analysis) showed that the factor loadings for

all questions related to each items in Table 3 were higher than the requested (0.4) according to Field (2018) (feedback = 0.710–0.887, caring = 0.653–0.852, dialog = 0.448–0.930, show skills = 0.775–0.881), with high eigenvalues (feedback = 5.2, caring = 6.5, dialog = 3.5, show skills = 5.6). Furthermore, the questions have a high face validity, and all the four factors correspond with the findings in another study using the same questionnaire (Andresen et al., 2023), but also with another study with qualitative data, pointing toward the same four factors (Løgestad et al., 2019) – which strengthen the reliability and validity of this study. In addition, Cronbach's alpha tests showed that the internal consistency of the factors/indexes was higher than the requested 0.7 (Ringdal, 2018) (see Table 6). This indicates that the questions of which the factors consist of relate to each other, and that the questions included in the five different factors/indexes address the same issue.

A similar variable was also created for the question related to the extent to which students felt seen. Kolmogorov-Smirnov tests showed that all five variables were not normally distributed ($p < 0.05$). Because the data were not normally distributed, non-parametric tests were chosen (Johannessen et al., 2016). The difference in change between pre-test and post-test between the intervention group and the control group was illustrated using Mann-Whitney U tests. Mann-Whitney U tests were also used to illustrate any differences between the control group and the intervention group at pre-test. Wilcoxon tests were used to illustrate changes from pre-test to post-test in the two groups. Significant differences were set at $p \leq 0.05$, and the results are presented as means and standard deviations. Effect size was evaluated with Cohens d where 0.2 constitutes a small effect, 0.5 a medium effect, and 0.8 a large effect (Cohen, 1988). The statistical analyses were conducted in SPSS version 29.

TABLE 3 Overview of the questionnaire's distribution of questions related to the four factors (Andresen et al., 2023).

	Feedback	Caring	Dialog	Show skills
1. I feel seen by my PE teacher.	–	–	–	–
2. My PE teacher gives me instructions during the activity.	X	–	–	–
3. My PE teacher gives me instructions before the activity.	X	–	–	–
4. My PE teacher tells me what I do well in class.	X	–	–	–
5. My PE teacher gives me confirmation when I succeed in PE class.	X	–	–	–
6. My PE teacher praised me during PE class.	X	–	–	–
7. My PE teacher tells me what I can work on more in PE class.	X	–	–	–
8. My PE teacher motivates me.	X	–	–	–
9. My PE teacher encourages me in PE class.	X	–	–	–
10. My PE teacher cares about how I am doing outside of PE class.	–	X	–	–
11. My PE teacher sees my needs.	–	X	–	–
12. My PE teacher wants to get to know me.	–	X	–	–
13. My PE teacher notices if PE is difficult for me.	–	X	–	–
14. My PE teacher tries to help me if they see that I find something difficult.	–	X	–	–
15. My PE teacher cares about how PE is for me.	–	X	–	–
16. My PE teacher notices if there is something I cannot do in PE class.	–	X	–	–
17. My PE teacher is easy to talk to outside of PE.	–	X	–	–
18. My PE teacher tries to help me if there is something I find difficult.	–	X	–	–
19. My PE teacher is easy to contact outside of PE class.	–	X	–	–
20. My PE teacher is friendly.	–	–	X	–
21. My PE teacher is easy to contact in PE class.	–	–	X	–
22. My PE teacher is easy to talk to in PE class.	–	–	X	–
23. My PE teacher explains things in a way that I understand.	–	–	X	–
24. My PE teacher listens to me if I have a problem.	–	–	X	–
25. My PE teacher lets me take part in my own assessment.	–	–	–	X
26. My PE teacher asks me what I find difficult.	–	–	–	X
27. My PE teacher asks me what I find easy.	–	–	–	X
28. My PE teacher gives me challenges that match my skill level.	–	–	–	X
29. My PE teacher helps me see what I am good at.	–	–	–	X
30. My PE teacher interacts with me during PE class.	–	–	–	X
31. My PE teacher lets me take part in various decisions related to PE.	–	–	–	X
32. My PE teacher has different activities so that everyone can show their skills.	–	–	–	X

Results

In the figures the pre-test results (questionnaire after a volleyball lesson) of both the control group and intervention group are presented, but also the post-test results of both groups with the questionnaire after the same volleyball lesson, but the teachers of the students in the intervention group have had a course related to being seen. The differences in change between the two groups from pre-test to post-test is the most important measure, but also the change within each group from pre-test to post-test, and the differences between the control group and the intervention group at pre-test. The analysis regarding students' experience of being seen shows that there is a significant difference in change from pre-test to post-test between the intervention group and the control

group [$Z = -3.5$, $p < 0.001$, $d = 0.766$, 95% CI (0.300, 1.027)]. As we can see from Figure 1, this is due to a significant decrease in the experience of being seen in the control group at post-test compared to pre-test [$Z = -3.5$, $p < 0.001$, $d = 0.564$, 95% CI (0.263, 0.860)], while the experience of being seen increases slightly in the intervention group at post-test compared to pre-test, but not significantly [$Z = 0.7$, $p = 0.432$, $d = -0.083$, 95% CI (–0.304, 0.168)]. However, the analysis shows that the control group had significantly higher experience of being seen at pre-test compared to the intervention group [$Z = -2$, $p = 0.041$, $d = 0.342$, 95% CI (0.021, 0.661)].

The analyses regarding students' experience of the teacher caring show that there is no significant difference in change between the intervention group and the control group [$Z = -0.3$,

TABLE 4 The table provides an overview of the different phases and time involved in the implementation of the intervention.

Fase	Day	Activity
1	1–5	The volleyball session followed by completion of the pre-test questionnaire in 10/10 classes.
2	7	Random selection of teachers for the intervention.
3	8	Teaching and guidance of the three teachers in the intervention group.
4	15–19	The volleyball session followed by completion of the post-test questionnaire in 8/10 classes.
5	31–33	Volleyball session followed by completion of the post-test questionnaire in the remaining 2 classes

$p = 0.758$, $d = 0.074$, 95% CI $(-0.257, 0.405)$). As we can see from [Figure 2](#), this means that the experience of the teacher caring is almost constant in both the intervention group and the control group at post-test and pre-test, and the analyses show that there is no significant change in the experience of the teacher caring from pre-test to post-test, neither in the control group [$Z = -1$, $p = 0.339$, $d = 0.073$, 95% CI $(-0.340, 0.195)$] nor in the intervention group [$Z = -1.7$, $p = 0.089$, $d = 0.162$, 95% CI $(-0.359, 0.355)$]. However, the analysis shows that the control group had significantly higher experience of the teacher caring at pre-test compared to the intervention group [$Z = -2.1$, $p = 0.036$, $d = 0.249$, 95% CI $(-0.84, 0.581)$].

The analysis shows that there is a significant difference in the change from pre-test to post-test between the intervention group and the control group regarding students' experience of receiving feedback [$Z = -3$, $p = 0.003$, $d = 0.683$, 95% CI $(0.261, 1.011)$]. As we can see from [Figure 3](#), this is because while the experience of receiving feedback increases somewhat (but not significantly) in the intervention group [$Z = -1.8$, $p = 0.066$, $d = -0.209$, 95% CI $(-0.435, 0.019)$], students in the control group experience receiving feedback to a lesser extent at post-test than at pre-test [$Z = -2.3$, $p = 0.023$, $d = 0.411$, 95% CI $(0.108, 0.710)$]. However, the analyses show that the control group had significantly higher experience of receiving feedback from the teacher at pre-test compared to the

intervention group [$Z = -2.5$, $p = 0.014$, $d = 0.291$, 95% CI $(-0.041, 0.622)$].

The analysis regarding students' experience of dialog shows that there is a significant change from pre-test to post-test between the intervention group and the control group [$Z = -3.5$, $p < 0.001$, $d = 0.071$, 95% CI $(0.85, 1.039)$]. As we can see from [Figure 4](#), this is due to significantly lower experience of dialog in the control group at post-test compared to pre-test [$Z = -3.9$, $p < 0.001$, $d = 0.625$, 95% CI $(0.309, 0.935)$], while the experience of good dialog increases slightly in the intervention group, but not significantly [$Z = 0.5$, $p = 0.637$, $d = -0.057$, 95% CI $(-0.288, 0.174)$]. However, the analyses show that the control group had significantly higher experience of dialog with the teacher at pre-test compared to the intervention group [$Z = -2$, $p = 0.047$, $d = -0.027$, 95% CI $(-0.353, 0.299)$].

The analysis regarding students' experience of showing their skills points out that there is a significant change from pre-test to post-test between the intervention group and the control group [$Z = -3.4$, $p < 0.001$, $d = 0.662$, 95% CI $(0.297, 1.055)$]. As we can see from [Figure 5](#), this is because while the experience of showing their skills increases somewhat, but not significantly, in the intervention group [$Z = -1.9$, $p = 0.054$, $d = -0.233$, 95% CI $(-0.435, 0.000)$], students in the control group experience showing their skills to a lesser extent at post-test than at pre-test [$Z = -2.9$, $p = 0.004$, $d = 0.449$, 95% CI $(0.143, 0.750)$]. However, the analyses show that the control group had significantly higher experience of showing their skills at pre-test compared to the intervention group [$Z = -2.9$, $p = 0.004$, $d = 0.242$, 95% CI $(0.38, 1.16)$].

Discussion

The first main finding of the study was a significant difference in change from pre-test to post-test between the intervention group and the control group regarding the experience of being seen, but also the experience of receiving feedback, having a good dialog with the teacher, and showing their skills. According to effect sizes the experience of being seen constitutes a large effect, the experience of receiving feedback and showing their skills had a medium effect and having a good dialog a small effect (Cohen, 1988). These effect sizes show that the impact of the pedagogical approach being seen

TABLE 5 Description of the volleyball session that forms the basis for data collection and was conducted in all classes at pre-test and post-test.

Part of session	Time	What	How	Why
Warm up	10 min	Dance	The students line up and dance to choreography. The school has "own" dances created by students that are regularly used throughout the year.	Prepare the body for activity by increasing body temperature. Practice "group dances" for the winter ball.
Main part	45 min	Different activities with volleyball	Partner passes, using various hits/techniques – 10 min Play 3 vs. 3 to practice positioning – 15 min Team plays with short matches where positions are rotated – 20 min	Train technique, precision, and timing. Practice positioning and cooperation. Practice game situations, switching positions to develop versatility.
Cool down	5 min	Stretch	The students sit in their teams and suggest relevant stretching exercises to be performed	Relax muscles and get to know new exercises.

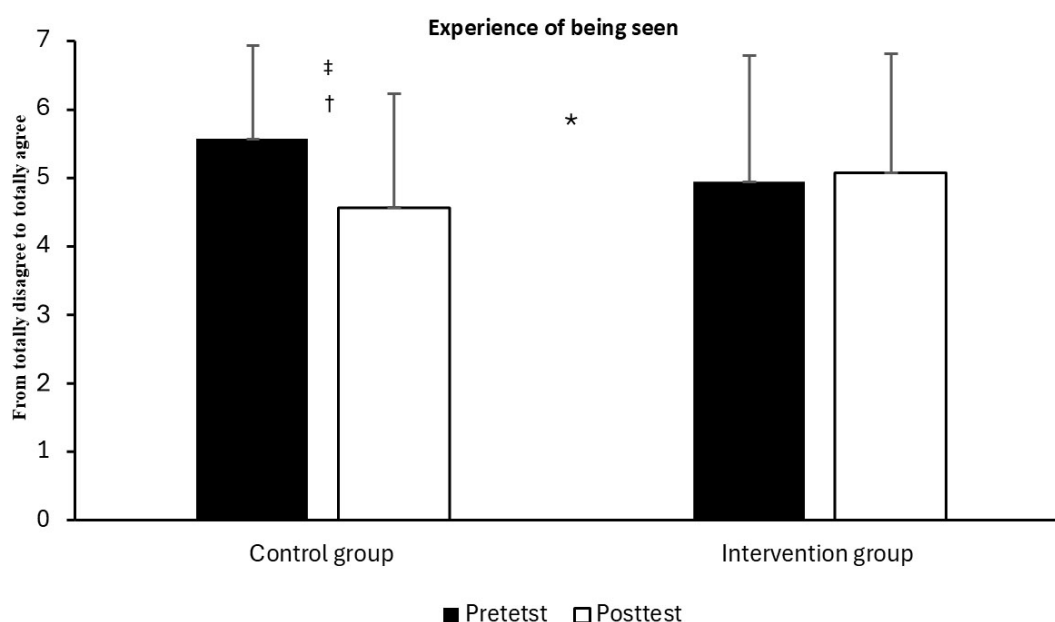


FIGURE 1

Students in the control group and intervention group's experience of being seen at pre-test and post-test. * Indicates a significant difference in change between the control group and the intervention group from pre-test to post-test ($p < 0.05$). ‡ Indicates a significantly lower experience of being seen in the control group at post-test compared to pre-test ($p < 0.05$). † Indicates a significantly higher experience of being seen in the control group than in the intervention group at pre-test ($p < 0.05$).

according to the experience of being seen, receiving feedback and the opportunity to show their skills is quite substantial and may have a practical significance for PE teachers. In practical terms, this suggests that the use of the pedagogical term being seen significantly enhances students' feelings of being acknowledged and valued during the teachers focus upon feedback and the opportunity for showing their skills. It's a meaningful difference that likely has positive implications for student engagement and overall classroom dynamics. The most positive factor reported by the students in both groups was dialog, and the most negatively reported factor was the experience of showing their skills. The intervention had the greatest effect on the experience of dialog with the teachers, and no effect on the experience of teachers caring.

These differences appear because the control group's experience regarding these factors significantly decreased from pre-test to post-test, while the intervention group's experience of these factors increased slightly (but not significantly) from pre-test to post-test. In this regard, it can be argued that the intervention had a positive effect in that the students in the intervention group still felt seen by the PE teacher at the post-test, despite the students going through the same volleyball session. Since the PE teachers in the intervention group had learned about the four factors underlying being seen (Lagestad et al., 2019) before the post-test, it appears that the students for these teachers maintained the good experience and still felt seen by their teacher. This finding and explanation are supported by previous research on being seen as an educational term (Andresen et al., 2023; Lagestad et al., 2019; Lyngstad et al., 2019). It is reasonable to assume that the PE teachers for the intervention group had a greater focus on the factors they learned about before the volleyball session, which formed the basis for the post-test results, and that this helps explain the results. It can

TABLE 6 Internal consistency of the factors measured with Cronbach's alpha test.

Factors	Cronbach's alpha
Feedback	0.922
Caring	0.940
Dialog	0.762
Show skills	0.938

be argued that it is more challenging to be a PE teacher than a teacher in another subject, as the framework around the teaching is looser compared to teaching in a classroom. This makes it more demanding to always be able to "see" the students. By not putting extra focus on the factors, this decline can occur.

From a critical point of view, we will argue that when the findings of stabilization or slight improvement in student perceptions within the intervention group is interpreted as a positive outcome, alternative explanations must be considered. One such possibility is the Hawthorne effect, where students may have altered their responses simply because they were aware of being part of a study or receiving special attention. However, this was the case with both groups. Similarly, teacher expectancy effects could have influenced the results, as teachers who received the intervention group course may have unconsciously conveyed higher expectations or more positive behaviors toward their students, thereby affecting student perceptions independently of the intervention content. In fact, more "positive behaviors" toward their students are the core of being seen approach! Nevertheless, these factors pose a threat to the internal validity of the study, as they introduce potential confounds that are not directly related to

the intervention itself. Future research should consider strategies to minimize these effects, such as blinding participants to the study's purpose or using longer-term interventions where novelty effects are less likely to persist. Another comment on the results in general could be that both the teachers from the control group and the intervention group were more "on" at pre-test since it was a new session, and they were aware that a study was being conducted. Since the session was similar at the post-test, this may have caused the teachers to lower the level, as the session had already been conducted earlier, and the teacher did not necessarily need to be as clear in communication. Furthermore, this can be seen in connection with Hattie (2013), who described that what the teacher does is crucial.

The results also show that a high proportion of students (over two-thirds) felt seen by the PE teacher in both groups at pre-test. It can be argued that the PE teachers at this school have a practice where students largely feel seen, experience good dialog with the teacher, get to show their skills in PE, receive feedback from the teacher, and feel that their PE teacher cares about them beyond just being present. As a comment on the high proportion of students who feel seen, it was observed during the collection of questionnaires that several teachers already seemed to have a strong focus on the four factors and thus had a practice that makes students feel seen. The fact that teachers in both groups already had a practice focused on these factors makes it difficult to create a change through such an intervention.

The study by Andresen et al. (2023) found a clear correlation between the quality of feedback and being seen, and it can therefore be assumed that teachers who have received training/guidance provide qualitatively better feedback. It can also be assumed that students in the intervention group received more feedback, which was also highlighted as important by Lagestad et al. (2019). In this context, it is natural to refer to Hattie (2013) meta-analysis, which showed that the effect of feedback was one of the most significant variables when it came to performance, and it can therefore also be assumed that satisfaction of this factor may have contributed to the general experience of being seen. Furthermore, a study among football players at the same age as in the present study (Berntzen and Lagestad, 2025) showed that when feedback was given, it led to a significant increase in mastery, the experience of being seen by the coach, and motivation, compared to the same training session when they did not receive feedback. Also here, the young players were given the same lesson twice - one without and one with feedback.

Previous studies have shown that good dialogs can be created through verbal comments, smiles, humor, and eye contact when the teacher is student-centered and shows interest in what is happening in the student's life (Aldridge et al., 2016; Nordahl, 2010). The teacher's ability to create such a dialog with the student is incredibly important and helps maintain the experience of being seen. A student may experience this when the teacher, for example, asks how they are doing, makes a joke, or through positive body language shows that they are looking forward to the PE session. Lagestad et al. (2019) pointed out that good dialog can affect the experience of being seen, as students believed that characteristics of being seen included good communication from the teacher.

From a theoretical standpoint, the positive effect of the intervention on being seen can be explained based on Jordet (2020) recognition pedagogy and Deci and Ryan (2000) self-determination theory - a theoretical basis also used by other empirical studies

related to being seen as a pedagogical approach (Andresen et al., 2023; Berntzen and Lagestad, 2025; Lagestad et al., 2019; Lyngstad et al., 2019). Lyngstad et al. (2019) points out that being seen largely involves satisfying one's basic social needs. Recognition pedagogy (Jordet, 2020) is based on the idea that humans have a fundamental psychological need to be seen and recognized by others, and love is an element related to this theory. The form of recognition called love and caring for the student can be linked to the experience of being seen, as when one's actions, opinions, and contributions are noticed and valued by others, one's sense of worth and self-esteem increases. This can contribute to increased motivation, self-confidence, and wellbeing in individuals. Thus, there is a clear connection between being seen and recognition, which is very important for an individual's psychological wellbeing and social relationships. It can be argued that being seen by others can have a significant impact on a person's self-confidence. When someone feels seen and recognized by others, it can help strengthen their self-esteem and confidence. Receiving confirmation and attention from others can give a sense of value and significance, which in turn can build self-confidence. At the same time, a lack of recognition and attention can lead to low self-esteem and reduced confidence in a person. Being seen in the light of recognition, pedagogy involves giving each student the recognition, support, and respect they need to thrive and succeed in school. Also, Deci and Ryan (2000) self-determination theory that includes autonomy support, competence and relatedness is closely related to being seen. In a study by Paap et al. (2025) PE teachers were aimed at fostering students' these basic psychological needs in PE settings. The results showed that students in the experimental group perceived significantly higher autonomy, competence, and relatedness support compared to their control group counterparts at post-test. However, the PE teachers in the intervention group underwent a much longer intervention program (4 weeks) and included many more teachers (49 in the control group and 36 in the intervention group). Even if the present study also used a random sampling method as Paap et al. (2025) did, the low number of teachers involved in both groups. Nevertheless - both studies indicate that interventions aimed at increasing teacher support for increasing students' experience of being seen, have the potential to work. Also, several other intervention studies closely related to being seen that focus on autonomy support, competence and relatedness indicate that self-determined instruction is positively reflected in pupils' motivation (Prusak et al., 2004; Ward et al., 2008; How et al., 2013). Leisterer and Paschold (2022) found that to improve students' positive affective-emotional perception, PE teachers can employ a supportive teaching style which has a strong positive effect on students' enjoyment.

The study's findings indicate that it is important for PE teachers to facilitate being seen by providing feedback, striving for good dialog with students, and giving them the opportunity to show their skills. All these factors are closely related to self-determination theory (Deci and Ryan, 2000) which points to competence, autonomy, and relatedness as basic psychological needs that people need to satisfy to function and develop. While feedback and striving for good dialog with students can be argued to be related to the development of competence and relatedness, showing their skills is strongly linked to competence but can also be related to autonomy and relatedness. Students will feel a greater sense of belonging if they feel supported by the teacher.

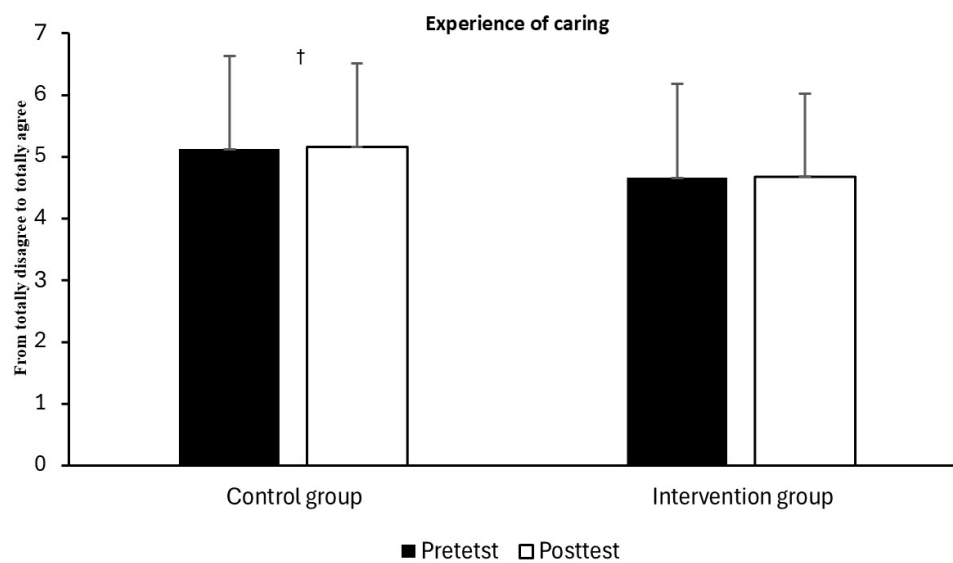


FIGURE 2

Students in the control group and intervention group's experience of the teacher caring at pre-test and post-test. † Indicates a significantly higher experience of the teacher caring in the control group than in the intervention group at pre-test ($p < 0.05$).

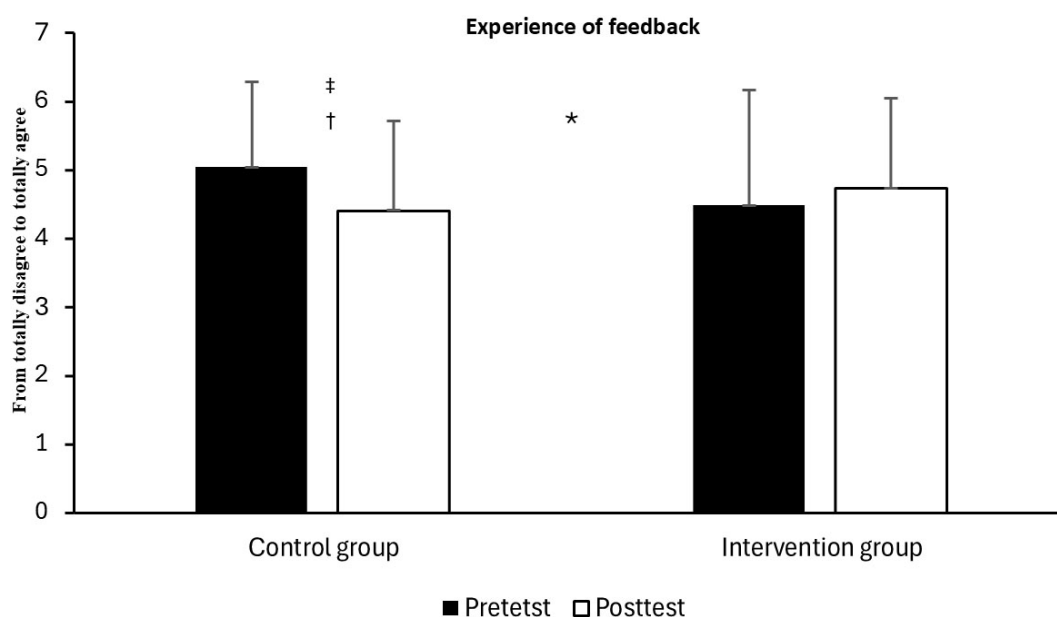


FIGURE 3

Students in the control group and intervention group's experience of receiving feedback from the teacher at pre-test and post-test. * Indicates a significant difference in change between the control group and the intervention group from pre-test to post-test ($p < 0.05$). ‡ Indicates a significantly lower experience of receiving feedback at post-test compared to pre-test ($p < 0.05$). † Indicates a significantly higher experience of receiving feedback in the control group than in the intervention group at pre-test ($p < 0.05$).

The second main finding was that students in the control group felt seen by the teacher to a significantly greater extent than the intervention group at pre-test and experienced significantly higher baseline perceptions of being seen, teacher care, feedback, dialog, and opportunities to demonstrate skills at pre-test. However, the effect sizes of these differences constitute a small effect (Cohen, 1988), and we will argue that these differences are mainly statistically significant differences with little effect upon practice. Nevertheless, this pre-existing disparity complicates the causal

interpretation of the intervention's effects. While the intervention group showed improvements or stability in these areas post-intervention, and the control group experienced declines, it is unclear to what extent these changes can be attributed solely to the intervention. The higher initial scores in the control group may have introduced a ceiling effect, limiting the potential for further improvement, while the intervention group had more room for growth. Future studies should aim to ensure more equivalent baseline conditions through stratified randomization or matching

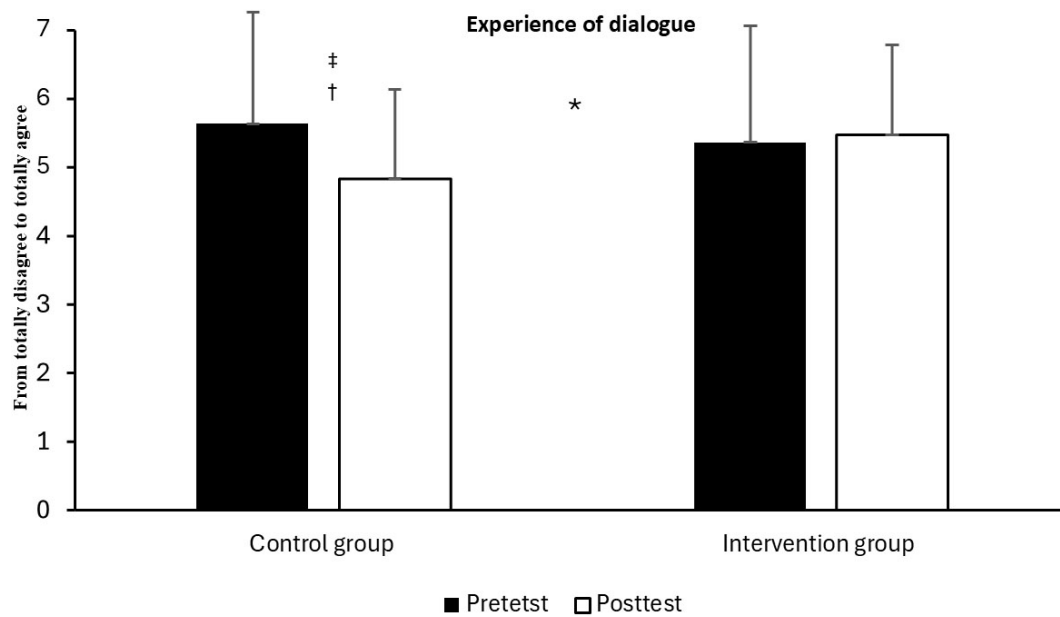


FIGURE 4

Students in the control group and intervention group's experience of dialog with the teacher at pre-test and post-test. * Indicates a significant difference in change between the control group and the intervention group from pre-test to post-test ($p < 0.05$). ‡ Indicates a significantly lower experience of good dialog in the control group at post-test compared to pre-test ($p < 0.05$). † Indicates a significantly higher experience of good dialog with the teacher in the control group than in the intervention group at pre-test ($p < 0.05$).

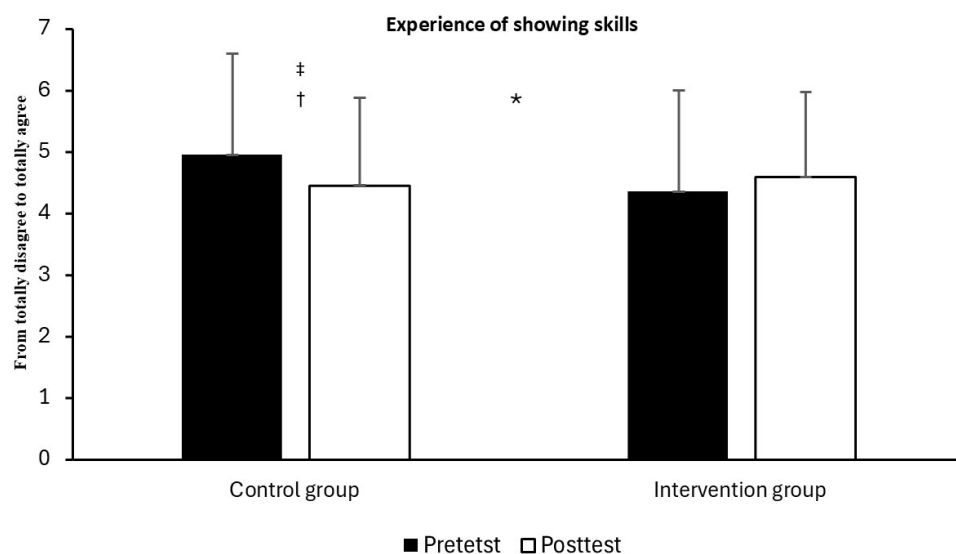


FIGURE 5

Students in the control group and intervention group's experience of showing their skills in physical education (PE) at pre-test and post-test. * Indicates a significant difference in change between the control group and the intervention group from pre-test to post-test ($p < 0.05$). ‡ Indicates a significantly lower experience of showing their skills in the control group at post-test compared to pre-test ($p < 0.05$). † Indicates a significantly higher experience of showing their skills in the control group than in the intervention group at pre-test ($p < 0.05$).

procedures to strengthen causal inferences or use ANCOVA or statistical matching to adjust for baseline differences. In this regard, it can be argued that it takes more to maintain this experience when conducting the same volleyball session a week later. In that respect, we will highlight the “being seen” course provided to PE teachers was short in duration, and the intervention was applied in only one follow-up lesson. This limited exposure may

not have been sufficient for teachers to fully internalize and consistently implement the targeted practices, such as providing meaningful feedback, engaging in dialog, and facilitating student participation in goal setting. As a result, the observed effects may reflect short-term or surface-level changes rather than sustained pedagogical shifts - thereby limiting the internal validity of the study. Furthermore, the short intervention period restricts the

ability to assess long-term impacts on students' experiences of being seen, which may evolve over time with continued teacher engagement. This also affects the generalizability of the findings, as the results may not extend to other educational contexts, age groups, or subject areas without a more robust and sustained implementation. Future research should consider longer training periods – as Paap et al. (2025) did, and extended implementation phases to better evaluate the durability and broader applicability of the intervention.

When comparing our results from middle school students with the findings of Andresen et al. (2023) from high school students, approximately the same number of students reported feeling seen by their PE teacher in both studies. It can be assumed that the students who feel seen have a sense of being recognized by the teacher through being shown respect, receiving praise, and appreciation. As Honneth (2008) described, this is important for healthy psychological development and helps build students' self-esteem (2020). It can be argued that the experience of being seen is related to students feeling trust, safety, and respect, and that someone cares about them.

The third main finding was that the factor “caring” stood out by not showing a significant difference in change from pre-test to post-test between the control and intervention groups. This may indicate that the teacher has shown professional love, which has led to students maintaining the feeling of being seen, regardless of whether the teachers have received training on what is important for the experience of being seen. Professional love means combining empathy, warmth, and care on one side, and challenging, correcting, and setting boundaries based on the individual's conditions on the other (Jordet, 2020). The love between teacher and student, as described by Jordet (2020) can have an important function in students' lives and learning at school. It is a fundamental attitude that students' needs should be at the center. It can be argued that the love between teacher and student is an inherent quality that teachers possess, and that it is therefore maintained naturally regardless of external influence. The ability to care may not be something one can learn but is a natural trait and can be linked to the concepts of “agape” and “storge.” A combination of agape and storge is considered the most favorable teacher role. Since this may be a trait that cannot be learned, this may be a contributing reason for the lack of a significant difference between the two groups.

Strengths and weaknesses of the study

This case study has several strengths, but also some weaknesses. One strength is that an experimental approach was used with a randomly selected intervention group and control group to highlight the effect of the educational term “being seen.” Another strength is that the educational term “being seen” is based on findings from three previous peer-reviewed research articles (Andresen et al., 2023; Løgestad et al., 2019; Lyngstad et al., 2019). and that the questionnaire used was developed and validated in a previous study (Andresen et al., 2023) However, the study has some weaknesses. The participating school was selected using a case study with a stratified sample (Johannessen et al., 2016). The present results are likely representative of other schools, but this

cannot be stated with certainty. Another significant limitation of this study is the short duration of the intervention. The course on factors that research has shown to be the basis for students' experience of being seen was relatively brief, and the intervention period only involved a single post-test PE session. Future studies should include a longer, more thorough, and comprehensive course with a longitudinal design. This short duration may have limited the depth of understanding and application of the concepts by the teachers. Additionally, while the number of students in both groups was relatively high, the sample size of teachers was notably small. Only three teachers from each group (control and experimental) participated in the research. This small sample size may have contributed to the observed differences in the control group's pre-test results, where they reported a significantly higher experience of the teachers' “being seen” attitude in four of the five factors. The limited number of teachers reduces the generalizability of the findings and may not accurately represent the broader population of educators. Moreover, the effectiveness of the intervention could have been influenced by the pre-existing teaching styles of the participating teachers. Many of the teachers may already have a teaching style that facilitated students' feeling seen, which could have diminished the observable impact of the intervention. Future studies should aim to include a larger and more diverse sample of teachers with longitudinal design and a more substantial being seen course to better assess the intervention's effectiveness across different teaching styles. Finally, teacher behaviors and student motivation should be measured more directly in future studies.

Conclusion

Based on an experimental intervention study with an intervention group and a control group, this study has examined the extent to which an intervention based on the educational terminology of being seen affects students' experience of being seen by the PE teacher. The results show that such an intervention seems to positively influence students' experience of being seen, as there is a significant difference in the experience of being seen between the control group and the intervention group from pre-test to post-test, as well as in three of the four factors that have been shown to underline being seen - feedback, dialog, and show their skills in PE. The results suggest that when teachers are particularly aware of and focus on the four factors related to being seen, students feel somewhat more seen by their PE teacher, or rather - they maintain the experience of being seen to a greater extent. The results of this intervention study suggest that what the teacher does matters – something also emphasized by Hattie (2013). The study's findings indicate that it is important for PE teachers to facilitate being seen by providing feedback, striving for good dialog with students, and giving them the opportunity to show their skills in PE. Through active dialog and feedback to all students, where they also can participate in decision-making related to PE activities, teachers facilitate students experiencing good dialog, showing their skills, feeling that the teacher cares, and receiving developmental feedback. These are all practical knowledge that policymakers, PE curriculum developers and teachers should have in mind. To address the limitations of the present study, future studies should strive to extend the duration of the intervention

to allow for a more comprehensive understanding and application of the concepts. They should also increase the sample size of teachers to enhance the generalizability of the findings and provide a more accurate representation of the broader educator population. Finally, they should include teachers with varied teaching styles to better evaluate the intervention's effectiveness across different educational approaches.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Norwegian Agency for Shared Services in Education and Research (SIKT). The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

IB: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Software, Validation, Writing – original draft. PL: Conceptualization, Formal analysis, Investigation, Methodology, Software, Supervision, Validation, Writing – review & editing.

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Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

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