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# Teachers' perceptions related to structural influences in physical education: a comparative study of Finland and the Kurdistan Region of Iraq

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**Introduction:** Physical education (PE) is essential for the holistic development of students due to its positive effects on their cognitive, societal, and emotional aspects. By considering the complexities of PE, teachers can assist students to achieve academic success, community well-being, and personal development, thus establishing the foundation for long-term success and sustainability.

**Methods:** Thematic analysis of PE teachers' reflections on open-ended questions about their PE teaching revealed structural factors as a major theme. However, a lack of knowledge remains regarding how structural influences affect PE teachers' perspectives in various socio-cultural, historical, and geographical contexts. Therefore, the purpose of this research is to provide a comparison of the different perspectives gained from PE teachers in Finland and the Kurdistan Region of Iraq (KRI). Data were gathered from 14 PE teachers: six from KRI (three men and three women) and eight Finnish (four men and four women). The average age of the Finnish group was 39 (SD: 8), with a range of 28–49 years. Teachers from KRI ranged in age from 24 to 59, with an average age of 38 (SD: 13).

**Results:** The thematic analyses of the PE teachers from the two regions identified both commonalities and differences in relation to crucial structural components, such as policy frameworks, curricula requirements, resource allocations, and institutional support. Our results showed that PE teachers in Finland benefit from a nurturing atmosphere that promotes a favorable opinion of their profession. In the KRI, however, teachers encounter significant obstacles that affect their viewpoints and the quality of PE instruction.

**Discussion:** These findings can significantly impact the development of educational policies and strategies. The Finnish results demonstrate the effectiveness of current strategies, suggesting that further advancements in PE could improve students' overall well-being and engagement. Conversely, the study highlighted the need for adjustments to KRI's curriculum,

teaching methodology, and policies to elevate PE's standing and address the resource gaps that currently hinder its optimal implementation. This study also aims to identify prospective PE development sites within each of these regions.

#### KEYWORDS

PE teachers, structural influences, comparative study, teachers' perceptions, Finland, Kurdistan Region of Iraq

## Introduction

Physical education (PE) is crucial for students' growth, as it helps to develop the requisite mental strength and resilience for holistic development (Lubans et al., 2016). Malinauskas and Malinauskiene (2021) assert that PE also fosters social and emotional development. Additionally, PE is essential in preventing a sedentary lifestyle (Abdullah et al., 2014; Maina et al., 2016). It promotes the mental and overall health of adolescents and provides opportunities for collaboration, social interaction, and leadership roles (Roccliffe et al., 2023). Indeed, many studies indicate that team sports and cooperative activities enhance interpersonal skills, such as leadership, teamwork, and communication, which are critical for success in both the workplace and the classroom (Baños et al., 2023; Liu et al., 2023).

The organizational and physical components that influence the caliber and efficacy of the PE curriculum are in this article referred to as structural factors. These include class sizes, curriculum design, teacher qualifications, the availability and state of facilities and equipment, and the amount of time allotted to PE practices. These elements are crucial in shaping the experiences and performance of students in PE classes. Less access to adequate sports facilities may make the students less inclined in participating in PE classes; thus, making the PE programs' creation and sustainability very difficult. For instance, establishing a stimulating and effective learning environment for students requires facilities that are kept up properly and sufficiently. If resources are adequate, they can enhance the standard of instruction and promote increased physical activity, both of which benefit students' health in the long run (Mohammed et al., 2024).

Another important factor that affects how PE is delivered is curricula design. Giving all pupils the valuable information and the abilities they need to engage in physical activity in an efficient and inclusive manner. Students' motivation, engagement and general satisfaction with their PE experience can all be greatly increased by following a well-organized curriculum that satisfies academic requirements. PE teacher's credentials are also crucial; those with specialized training typically employ more successful teaching techniques which improve students' attitudes and academic results (Harris, 2018; McKenzie and Lounsbury, 2013). Furthermore, students' engagement is directly impacted by the amount of time spent on PE. Research has indicated that students who receive adequate PE time have higher levels of physical activity and better motor skills underscoring the significance of schools giving these programs top priority and allotting the right amount of time (Gross, 2009).

Research focusing on structural factors in PE instruction is scarce, particularly comparative studies. Whether a PE class

is held indoors or outdoors, however, may impact relevant outcomes. Pasek et al. (2022) report that indoor practice is advantageous for regularity and consistency in practicing skills and techniques, especially under inclement weather conditions. In contrast, outdoor PE offers unique benefits by allowing students to engage with nature and experience various environments in good weather. Moreover, unstructured outdoor play and physical exercise are crucial for cultivating awareness and critical thinking abilities. Rohde et al. (2023) assert that exposing students to dynamic outdoor PE scenarios can support their capacity for creative thought and problem-solving.

To maximize support for student development, it is necessary to elucidate how structural components impact PE teaching. Recognizing the unique values and advantages of various environments and incorporating them into a productive program can achieve this. By adopting this approach, teachers can ensure that PE lessons significantly enhance students' overall growth and academic performance (Pasek et al., 2022; Rohde et al., 2023).

In this study, we examine the impact of structural factors within Finnish PE teaching and PE teaching in the Kurdistan Region of Iraq (KRI) through PE teacher's perceptions and reflections. Gaining more insight into how cultural factors influence teaching strategies and the viewpoints of PE teachers may facilitate identifying optimal ways to promote basic development. This research is conducted collaboratively by Tampere University (TAU) and the University of Duhok, with academic material exchanges and other publications aimed at developing mutual knowledge in both Global North and Middle Eastern countries. Ongoing meetings and workshops for identifying challenges and possibilities for joint research have led to a focus on the teacher's perceptions on PE at schools in KRI.

Teachers play a key role in implementing PE in classrooms, as well as influencing students' self-esteem (Granero-Gallegos et al., 2023), shaping their views of PE and attitudes toward physical activity, as well as engaging and motivating them in physical activities (Guo et al., 2023). Thus, teachers' perceptions are of paramount importance and understanding how non-sport factors impact these perceptions can be more effectively achieved through comparative studies. Moreover, a key difference highlighted in a previous study by Ligestad et al. (2024) was the use of student autonomy, which emerged as an important factor, underscoring the need for a deeper understanding of teachers' perceptions in a comparative context.

In Finland classrooms, teachers with master's degrees in education are primarily in charge of managing PE in elementary schools. These teachers complete five-credit PE courses during their first year of study as part of the training programs provided by eight Finnish universities. Certain academic institutions permit students to pursue a specialization in PE if they complete 25 credits

of prerequisite coursework in the subject. Specialized training at the University of Jyväskylä is required for PE teachers holding master's degrees in sports. While their primary employment is in high schools, these teachers also work occasionally in elementary schools. Although their degree in PE varies, Finnish elementary school teachers generally perform well in postsecondary education settings.

In the KRI, however, the Ministry of Education has not yet put in place a standardized PE curriculum. To ensure that every student makes equal progress in PE, teachers must create a comprehensive yearly program that is suited to the development stages of each of their students. The PE curriculum is divided into two seasons with 40 units each that combine theoretical and practical components, as well as an additional 60 units of related material. The final assessment is performed at the conclusion of every season and is not entirely standardized.

As previously stated, there is a paucity of research about how structural factors affect PE instruction, especially in terms of comparative studies. Particularly there is no research that has addressed structural factors in PE curricula between Finland and any Middle Eastern region such as KRI. While Finland's PE curriculum is based on research, teacher autonomy, and student-centered learning, Middle Eastern PE curricula may differ in structure, goals, and implementation strategies due to cultural, policy, and resource factors. No existing study systematically compares these differences between Finland and KRI to understand how structural factors shape PE teaching, activities and its status. Moreover, few studies emphasize how geographical, cultural, and social influences shape instructional factors in PE (Baskin et al., 2015). According to Tan (2022), non-sports-influencing factors should be given more consideration in understanding the decline of PE. Comparative studies provide valuable insights into the significant influences of geographical circumstances, cultural and social norms, socioeconomic conditions, basic beliefs, and traditions on PE, offering an opportunity to recognize the key factors affecting PE teaching, activities, student engagement, and the overall status of PE in schools and society. A comparative approach not only helps in understanding the challenges but also highlights the potential and values that could inform adaptable strategies for developing PE. This contributes to building a strong foundation for PE, promoting lifelong engagement in physical activities, and fostering positive attitudes toward physical and mental well-being. Therefore, the aim of this study was to examine how structural factors influenced PE teaching practices among PE teachers in Finland and the KRI. With such a strategy, the study seeks to obtain a better understanding and new knowledge that may be of importance in developing effective PE teaching and curricula.

## Materials and methods

### Design

The study employs a qualitative design, utilizing semi-structured in-depth interviews and a phenomenological-hermeneutic approach to investigate the research question (Tjora, 2017). This approach involves examining the opinions, perceptions, experiences, and reflections of Finnish and KRI's fifth-grade PE

teachers concerning their roles, as well as their insights on indoor and outdoor videos showcasing typical PE teaching sessions from the other respective country.

From the perspective of teachers' performance, the relationship between a teacher and the curriculum is fundamental. Consequently, understanding the interaction between the curriculum and teachers' practices, as well as the significance, meaning, and role of the curriculum for PE teachers in both KRI and Finland, has been identified as an initial step in developing PE teaching practices. This understanding also aims to foster mutual recognition of PE curriculum contexts to advance teaching methods in PE.

To explore this issue and compare how teachers in Finland and the KRI work with their curricula, data collection was primarily conducted through recording 10–15 min instructional videos (both outdoors and indoors) of fifth-grade PE classes in Tampere and Duhok. Videos are currently regarded as the most straightforward method for participants to observe and analyze each other's instructional planning and teaching execution. Recording videos facilitated insights into how PE teachers interpret and implement the curriculum in their daily work and revealed their teaching methods during PE lessons. Additionally, the videos highlight other contextual elements, such as social and cultural conditions, as well as the physical facilities available for PE lessons. The videos were subtitled into English to enhance comprehension. The video-recording process adhered to strict ethical standards, with all necessary permissions secured in both Finland and the KRI.

Analyzing both indoor and outdoor videos supports the structuring of subsequent phases for data collection. Consequently, the research team developed an interview survey targeted at PE teachers who currently teach in the fifth grade or have prior experience at this level. All activities within this research project adhered to the ethical guidelines for research involving human subjects and human sciences established by the Finnish National Board on Research Integrity (2019) and the ethical standards for research in the KRI, which meet the ethical requirements for empirical research. The study was also conducted in compliance with the Declaration of Helsinki. Participants were thoroughly informed about the study's protocol prior to participation, and written consent was obtained from all participants.

### Participants

The participants were recruited using strategic selection (Thagaard, 2013) based on the inclusion criteria, which were being PE teachers for fifth-grade students in Finland or the KRI and having a candidate's or master's degree in PE or a master's degree in education (class teacher). In total, eight Finnish PE teachers (four male and four female) and six PE teachers from KRI (three male and three female) agreed to participate in the study after being contacted by the researchers. Teachers were selected randomly from various schools to ensure a diverse representation of schools across the region. Also, the working experience of teachers was considered to get both novice and expert teachers as participants. Recognizing the relevance of gender equality in data collection, a concerted effort was made to ensure balanced participation from both genders. This decision stemmed from discussions held

with colleagues from both countries, in which the shortage of female PE teachers in educational institutions and schools was addressed. The Finnish PE teachers' ages ranged from 28 to 49 years (mean = 38.5 years; SD = 8.25), and their experience as PE teachers ranged from 1.5 to 30 years. The KRI PE teachers' ages ranged from 24 to 59 years (mean = 37.8 years; SD = 12.77), and their experience as PE teachers ranged from 5 to 25 years.

## Procedures

Both a typical indoor and a typical outdoor PE lesson (15 min each) were filmed in both countries, and these videos were abridged to a 30-min video in each country, showing the essential parts of the typical indoor and outdoor PE lesson. A semi-structured interview guide with open-ended questions was created. The interview guide included two parts, i.e., questions at the start and questions after the participants had seen the video from the PE teaching outside of their country. The initial questions included the following: What goals do you have in your physical education teaching? Do you have any specific teaching methods or other approaches that you use to achieve these goals? How do you see the connection between competitive sports and physical education? What do you find challenging in physical education? In your opinion, what kind of position does physical education have at your school? In your opinion, what is the role of physical education in your society? What kind of suggestions do you have for the next curriculum? For the second section after looking at the videos, the interview guide included questions, such as: What were your initial thoughts when you saw these videos? What do you feel you have learned from these videos? Is there anything specific you would like to discuss after looking at these videos? Are there similarities and differences in the videos that you noticed in terms of your teaching? How do you think the cultural context or the environment in which we live has influenced or are influencing physical education?

A pilot interview was conducted in Norway to test the interview guide. A 29-year-old male Norwegian PE teacher that was teaching PE in fifth grade was interviewed using the interview guide and watching the video from KRI. The pilot interview indicated that the questions seemed relevant. However, small changes were made to the questions and the order of the questions.

The interviews with Finnish PE teachers were conducted face-to-face in the Pirkanmaa region, except for one, which was conducted online using Microsoft Teams. The interviews with the PE teachers from KRI took place face-to-face at schools in the Duhok region. Most interviews were conducted in the participants' native languages (Finnish or Kurdish), although three interviews with Finnish participants were performed in English. These participants were also given the opportunity to communicate in Finnish toward the end of their interviews. All interviews were translated into English to facilitate joint analysis. Each interview lasted between 90 and 100 min, including a 30-min segment in the middle that was dedicated to viewing the videos.

## Analyses

The interview data were transcribed and analyzed using QSR NVivo 14 (London). The analyses were based on the participants'

answers to the questions collected during the interviews, and students' perceptions of experiences were considered to be subjectively true (Armour and Griffiths, 2012). The data are based on the subjective constructions verbalized by the teachers as they processed their own interpretations and reflections on what takes place in PE lessons at school, including reflections related to the indoor and outdoor videos from PE in the other respective country. Furthermore, the analyses focused on meanings, as described by Johannessen et al. (2016). The PE teachers' statements were identified according to the theme of experiences related to their organization of PE and their reflections on PE. This approach allowed the data from the interviews to be sorted based on these categories to elucidate patterns, similarities, relationships, and differences between the statements. The analysis and interpretation also followed hermeneutical principles, which led to an increasingly deeper understanding of the statements in the interviews (Kvale, 1983).

The data from the PE teachers in Finland and KRI were first read and coded into themes. The transcribed text was read repeatedly, and themes were formed from the interpretations of the teachers' statements during this process. Four researchers, each from different cultural backgrounds, participated in the analysis process. Interpretations and perspectives were extensively discussed in a series of meetings among these researchers. This rigorous method enhanced the credibility of the findings and increased the richness of the interpretations by incorporating the diverse insights and expertise of the researchers involved.

Through the coding of the teachers' expressions, several themes emerged. A prominent theme identified from the "open-minded" coding of the Finnish PE teachers' interview data was the importance of structural factors. Additionally, statements from PE teachers in both KRI and Finland revealed varied interpretations concerning the primary objectives of PE and their roles as teachers. These insights demonstrate how PE teachers' practices and perceptions vary.

All text that was related to structural factors was read through and coded into themes. This analysis indicated the following nine codes: Structural factors related to Finnish teachers: (1) *The availability of sports facilities and time management in schools.* (2) *Weather conditions* (3) *PE classes and cultural resonance.* (4) *Motivation and diversity.* Structural factors related to PE teachers from KRI: (1) *Lack of fields sports venues, and supportive social structures.* (2) *Lack of equipment and facilities.* (3) *Lack of social support.* (4) *Weather conditions and PE classes* and (5) *Lack of financial support.* These findings will be presented in the results section. To maintain confidentiality, participants were assigned pseudonyms in the presentation of the results (Table 1).

## Results

### Structural factors related to Finnish teachers

#### The availability of sports facilities and time management in schools

According to Finnish teachers' perceptions, the main issues with sports facilities are availability and time adjustments

TABLE 1 Participants' country/region, name (pseudonym), gender, age, degrees and working experience.

Country/region	Name	Gender	Age (years)	Degree	Working experience (years)
Finland	Heikki	Male	32	M.Ed.	7
Finland	Mauri	Male	30	M.Ed.	6
Finland	Anneli	Female	49	M.Sc.	20
Finland	Heidi	Female	48	M.Ed.	20
Finland	Matti	Male	41	M.Ed.	10
Finland	Tuula	Female	49	M.Ed.	30
Finland	Leena	Female	36	M.Ed.	20
Finland	Pasi	Male	28	M.Ed.	15
KRI	Darya	Female	24	B.Sc.	6
KRI	Jiyan	Female	30	B.Sc.	7
KRI	Zilan	Female	25	B.Sc.	5
KRI	Azad	Male	41	B.Sc.	19
KRI	Sherko	Male	59	B.Sc.	36
KRI	Karwan	Male	48	B.Sc.	25

when delivering PE classes in schools. PE teachers in Finland sometimes find it challenging to access adequate sports facilities for their classes, indicating a shortage of fields or other sports spaces to accommodate all students needing PE simultaneously. Additionally, the scheduling of PE classes poses a problem, as teachers struggle to manage timetables to avoid conflicts with other groups using the same facilities. Mauri provides a specific example of this issue:

*Well, inevitably, sport facilities have a significant impact. At least during one of those physical education sessions, we have multiple groups at the same time, and they need to use the facilities simultaneously. So, it restricts activities, especially when we only have 1 h. We need to avoid clashing with those who have double periods.*

Another interviewee stated that limited equipment and sport facilities not only affect the PE session but also diminish teachers' motivation. Anneli noted that, “not everyone always has access to all the equipment. So, when we plan activities, like ice skating or skiing, we need to consider whether there's enough equipment for all the groups”. Indeed, the availability of sufficient space and effective time management constitute significant obstacles for PE teachers, which affect PE classes in schools. Teachers stated that they sometimes must find alternative locations to conduct PE classes due to the lack of sufficient space. This is supported by Mauri, who mentioned, “We have a lot of physical education at our school, and we have specialized classes as well, so we have a great shortage of gym time. Especially during the indoor sports season, we must go elsewhere a lot”.

In this context, Mauri explained that there were times when teachers were unable to access the sports hall due to conflicts with

other teachers who were teaching PE at the same time, which posed a major problem when conducting PE classes. He stated:

*Well, inevitably, it has a significant impact. At least during one of those physical education sessions, we have multiple groups at the same time. So, it restricts us because when we only have 1 h. We need to avoid clashing with those who have double periods, so they can have their physical education class in the most optimal conditions.*

The statement points out that difficulties in accessing sports facilities may affect both teachers and students. Not all students can attend PE class that day, as explained by Mauri:

*And, of course, not everyone always has access to all the equipment. So, when we plan activities like ice skating or skiing, we need to consider whether there's enough equipment for all the groups. These are the kind of contextual constraints that arise in our daily school life.*

It is worth noting that Finnish teachers did not face any obstacles in obtaining sports facilities, and thus this factor does not affect their ability to conduct PE classes in schools. In other words, students can participate in PE sessions on a regular basis. This was clearly stated by Heidi: “In our school, the position of physical education is good. Firstly, we have the necessary structures in place, as mentioned earlier, to facilitate high-quality education, which includes having good equipment and facilities”.

Weather conditions

Weather conditions are another factor that Finnish teachers identified as impacting PE classes. They stated that bad weather influences their choice of sport activity because they require indoor

facilities, and due to limited space, they must sometimes opt for outdoor facilities. Mauri explains this:

*And, of course, something like baseball is highly culturally bound as a sport. And then there's the fact that we have seasons. But, in my opinion, it's rare that the weather is so bad that you can't go outside if your clothes are okay. And maybe that's also... Yeah. If we compare it to Central Europe, the conditions aren't necessarily very different.*

The interview data from Mauri also revealed that school culture influences the approach to weather conditions, ensuring that outdoor activities are not restricted by adverse weather.

*I know that in many places there, the weather restricts outdoor activities or sports when it's raining, for example. In my opinion, that is still a cultural aspect, at least in our school culture, that you can engage in outdoor physical activities in various weather conditions.*

Anneli also highlighted how the weather sometimes constrained the options for indoor activities:

*We try to be outside until autumn break. And, if there's heavy rain, then we consider whether the gym is available, and since we only have it once a week (laughs), we go with that. Then, from the autumn break until Christmas, it's mostly indoor activities, so we are either in the gym or at the Sports Center or some other reserved location.*

In the same context, the season impacts conducting PE classes and choosing the most convenient activities based on the weather. Teachers adjust various outdoor and indoor activities according to the weather in each season. This is expressed by Anneli:

*If there are winter sports activities, they are mainly scheduled during the winter season. If the winter is not favorable, then we book the ice rink, and so on. And then, after that, it goes back to indoor activities, and in April-May, we try to be outside as much as possible, depending on what we can do. So, the seasons do have a significant impact on it.*

Another interviewee, Heikki, confirmed that weather-related sports have a significant impact on PE, stating that, "when it comes to [the town], it is known as a hockey city, so that influence is evident. We do a lot of ice skating and spend time in ice rinks during winter, if possible".

## PE classes and cultural resonance

Teachers emphasized student interest and motivation in physical activities by highlighting the profound significance of certain sports for Finns, especially those influenced by geography and history. Furthermore, Finnish teachers have underscored the crucial role of physical activities in promoting well-being and health within society. They perceive this as an integral part of their nature or identity. Matti explains:

*Ice hockey is very big sport and stuff for Finnish, and football is also popular, and students are interested in them. Finnish like sport, and sport is a huge thing for Finnish people, and everyone likes that. Many people like sport because they like ice hockey. It is very natural for us to like sport according to the importance of health and well-being in Finland.*

Regarding the school culture and the status of PE at school, Heikki also stated:

*When the environment is conducive and the teachers demonstrate that appreciation, it reflects on the students themselves. This includes both the availability of equipment and the culture surrounding physical education. In our school, where physical education is highly valued, I firmly believe that it has a positive impact on students' behavior and motivation during physical education classes.*

The value of physical activities was emphasized by nearly all Finnish teachers, highlighting its influence on how PE is perceived by students and their levels of motivation.

## Motivation and diversity

Regarding this theme, the availability of sports facilities and easy access to the Kauppi Sport Center, which offers a large area and various facilities, encouraged students to be happy and motivated to participate in PE class. Moreover, in non-focused classes, teachers need to consider the variations in skill levels among students, as opposed to focused classes in which all students are inherently motivated to participate in PE. This is highlighted by Mauri:

*As for the class structure, I have both students with a focus on physical education and those who are not focused on it... Now, the students with a focus on physical education have their own physical education group, so all of them are really motivated in sports, and it's great to teach those classes. I also teach non-focused students, and their skill levels vary more, so I must take that into account more.*

Behavioral issues also emerged in interviews with teachers. Teachers noted that while most students demonstrated good behavior, some students required additional attention due to behavioral challenges. The major obstacle was that these students negatively impacted the behavior of others, presenting a significant challenge for the PE teacher. For example, Heikki stated that, "It's a major challenge to regularly reflect on my own actions and find ways to move forward with these students, so they don't hinder the entire group's experience and their own opportunity to participate in physical activities". Furthermore, these students' bad behavior had a significant impact on the school environment, as well as the experience of other students, as Heikki explains:

Dealing with students who may not be as motivated, but present behavioral challenges, and ensuring adherence to the shared rules and safety during physical education, can be a significant challenge in the school environment. It's important to strike a balance in working with these students.

## Structural factors related to teachers from KRI

### Lack of fields, sports venues, and supportive school collaboration

According to teachers from KRI, the structural factors influencing PE teaching present significant challenges in schools. These variables significantly impact the overall status of PE teaching, affecting both students and teachers' schedules throughout the school season. Schools lack various structural elements, such as adequately sized fields, sports venues, and supportive social structures (e.g., community and family attitudes and interest, accepted gender roles, accommodations for students with special needs, equipment, and opportunities). This common perception among teachers, school staff, and students contributes to the impression that PE class is not as important as other subjects and can be replaced with alternative subjects, such as science and mathematics. Karwan states:

*One week, the PE class may be replaced by another subject, and the following week, it may be substituted for exams or other activities. This pattern also applies to the Arts class, where both PE and Arts are considered unimportant and are proposed to be replaced by subjects like chemistry, physics, and biology.*

Karwan also stated that PE class receives less attention compared to other subjects, such as math and science. As a result, PE teachers and students are not as engaged in PE classes as they are in other subjects. He also mentioned that this could occur regularly. Karwan said, "If you go to a school and you have no place, there is no room for PE and there is no stadium. I mean, there is no sports equipment to teach PE class, or they may say many times that the class of PE is unimportant". It has also been pointed out that the lack of attention from schools toward PE class indirectly leads students to perceive PE as less important than other subjects. This lack of attention can negatively affect student motivation and their overall impression of the PE class. As Zilan said: "If the student prepares himself for the PE class and another teacher comes to take this class to teach another subject, this will give the student the impression that the PE class is unimportant, and he will not take it seriously, as well".

Another aspect of the lack of attention to PE classes in schools is the absence of dedicated PE teachers. This often results in PE classes being assigned to teachers of other subjects. Furthermore, there is also a low probability of having a permanent PE teacher available at the school. This issue was frequently mentioned by teachers. Sherko explains:

*Many schools have a lack of teachers of physical education. A teacher of another subject, say history, would take the students to the yard and teach them physical education classes, like just giving them a ball to play with where boys play separately from girls; however, these sessions often involve minimal instruction.*

Support by school administration was identified as another component that impacts PE class. Zilan states:

*There is no equipment, no space, and the administration of the school, in general, is not very supportive. The classes of PE and Arts have been marginalized and are usually replaced by other subjects or PE is put in the timetable at the end of the day, and there becomes a conflict among PE classes' time.*

Support for physical education (PE) can also be enhanced by ensuring that teachers and administrative staff prioritize and protect the PE class schedule. This means not allowing other teachers to replace PE with different subjects due to exams or other reasons. According to the findings, students view PE classes as a form of relief that helps them to feel more relaxed and better prepared for subsequent academic subjects. Sherko states: "The school, teachers, principal, students, see PE class as a very important one and they are supportive; the teachers do not dare to ask me to take my PE class because they know in advance that my answer will be no. Sherko also emphasized that students are not permitted to replace PE class with other subjects because they believe that PE class is a way to feel better, a perspective that is completely acceptable to the school administration: "When a teacher wants to make his exam in my PE class, all students frown as they see the PE class an outlet for them. Therefore, the administrative staff of the school becomes very happy when they see the students feel comfortable and cope with the PE class".

### Lack of equipment and facilities

Another issue that PE teachers from KRI identified during the interviews was the impact of the lack of equipment and facilities on PE classes at their schools. It appears that both equipment and facilities have a direct impact on PE, creating a major dilemma for teachers to overcome. Teachers emphasized that both equipment and facilities should be provided to the school; otherwise, they will be unable to continue working effectively with students. This lack of resources also influences the organization of competitions, whether within the school or with other schools. For instance, PE teachers are unable to participate in sport activities organized annually by the Education Office in the city due to a lack of equipment and facilities for preparation. In this situation, Sherko reported that, "We have many challenges, among which is the inadequacy of school yards for conducting physical education classes."

Sherko asserted that school yards are neither healthy nor suitable for conducting physical education classes, as they compromise student safety and prevent teachers from effectively implementing their programs. "There is a small yard of cement, we had two boards. They removed one for censoring cameras, and the second board is devoted for parking cars. Applying PE in a yard of cement may cause an injury for students during the class". Teachers unequivocally stated that PE classes cannot be conducted without proper equipment, stating that the most crucial resources are those used to enhance the quality and effectiveness of the PE curriculum.

The PE teachers from KRI pointed to both the theoretical and practical parts of the PE classes, which could influence PE teaching. They highlighted that despite the inadequacy of their facilities, they still encourage students to engage in practical activities. Zilan stated:

*Concerning facilities, I will not confine myself to a theoretical perspective of PE even if I let my students play in a cement yard. I employ those games that can fit cement because students must have practical lessons in sports as it has been belittled and has not been paid attention to.*

The PE teachers from KRI also reported statements like, “*due to lack of facilities, we sometimes have casualties*”. The PE teachers emphasized the importance of school facilities and perceive this as a fundamental challenge that needs to be addressed to provide more schools with access to these facilities. Zilan, in this regard, stated, “*Many people in sports activities know me. They promised to provide my school with a hall. The question here is, they provided me with one hall. What about the 360 other schools?*”

PE teachers from KRI emphasized the significance of having well-maintained equipment and facilities at schools, as these resources are essential for enhancing the quality of their instruction. For example, Jiyan said:

The biggest challenge is that I need to have tartan square to deliver my PE class in the best way possible. If the cement yard is achieving this positive effect, what about if I have tartan square? I bought tartan sponge for the students to make some movements and somersaults. Getting sport equipment is easy, but getting the hall is difficult.

### Lack of social support

Teachers indicated that social support is a crucial factor in enhancing PE classes. They highlighted that, in the past, parents were not very supportive of encouraging their children to participate in PE classes, believing that PE would not assist with homework and could negatively impact their cognitive achievement. Accordingly, Darya expressed:

*The social aspect is very important in this process. We sometimes face some challenges, but in recent years, society adopted the idea that an athlete is a peaceful, flexible person and comprehends ideas more; therefore, our society, not 8%, but 60%–70%, is helpful when we practice sports.*

In the same context, social support can manifest in various forms, as expressed by Darya, extending beyond mere verbal encouragement. Notably, the role of families in motivating their children to participate in PE classes and maintain focus was frequently emphasized.

*Whenever we ask for clothes, sports shoes, or assign activities, the parents of the students directly approve it, and they say if it is sport of school, it is fine. However, we have challenges with females, as their parents are somehow conservative. But, in recent years, they are better than in the past, say 15 years ago.*

Importantly, teachers have observed a significant shift in the acceptance of PE classes, which are now viewed as comparable to subjects like math, science, and languages. However, they also recognize the ongoing need for societal attitudes toward PE to evolve further. Jiyan noted that, “*Society must also change its*

mindset, and not marginalize PE or restrict it to only boys. This can be done by each one of us, starting with our families”.

### Weather conditions and PE classes

Weather and geographical conditions, like the experiences of Finnish teachers, emerged as crucial factors affecting the quality of PE classes and enhancing the motivation of both teachers and students in the Kurdistan Region of Iraq (KRI). Teachers reported that these factors significantly influence PE classes, noting that adverse weather conditions limit outdoor PE activities to less than 4 months per year. This poses a challenge for PE teachers in conducting their classes. Additionally, due to the lack of indoor facilities, PE teachers often must convert practical classes into theoretical ones, as highlighted by Darya, “*Rainy days prevent the PE class. The government should provide us with equipped sports halls to increase the passion of students in sports*”. From teachers’ perspectives, the lack of a hall constitutes a significant obstacle to conducting PE classes in schools, particularly during the winter. This issue was clearly articulated by the teachers, as Jiyan mentioned, “*there is no school in Duhok that has a sports hall. On rainy days, there is no PE class, and, inside the study hall, one cannot practice any sport due to the large number of students, almost 40 students in one hall plus study seats*”.

In this context, teachers noted that during the winter, they are compelled to engage in indoor activities. However, due to the absence of halls in schools, PE classes are often suspended during this period. Azad said, “*If we have an indoor hall, we will proceed with our PE classes on rainy days and hot days, as well. If it rains for 20 days, you need to know that the PE class is suspended for 20 days*”. Furthermore, teachers mentioned in their interviews that in the 1990s, there was a grass stadium where students were highly motivated to participate in PE classes because they could play on the field. However, rainy days often hindered outdoor PE sessions, negatively affecting student engagement. They recalled a memorable football match held on the grassy stadium, which brought great joy to the students. Reflecting on these experiences, the teachers acknowledged the potential benefits of having indoor halls at their schools.

### Lack of financial support

Based on the teachers’ perceptions and experiences, financial issues are one of the primary obstacles to achieving high status and quality in PE classes. Interviewees emphasized that the country’s economy has been struggling since 2014, leading to financial crises across various sectors of society. As a result, it has been challenging to obtain financial support for schools. Consequently, teachers have relied heavily on their own resources, with each school typically having a small shop for sports equipment from which they purchase training materials. Karwan stated:

*Well, financial support has decreased since 2014. Financial support mainly depends on the money that comes from the shop inside the school. Here, we face some challenges in which we barely manage ourselves financially so that we can save some money to buy two to three balls. We also make some training equipment manually ourselves.*

Karwan also mentioned that parents sometimes provide financial assistance to the school and their children. However,

acceptance of parents' offers is subject to the discretion of the school administration: "We get financial support from students' parents, as this is devoted to the whole school. This depends on the administration of the school". In the same context, Karwan confirmed that, "the only source is the shop of school (school resources)". Jiyan also pointed out that if PE teachers need to purchase sports equipment or paint yards, they should seek assistance from the school in various ways because the school's only resource is its shop. "We get money from the shop inside the school, and the directorate of education was also sending us money; however, now, there is no such financial support".

From the teachers' perspectives, financial support issues impact not only PE classes, but also school-wide activities. Teachers noted that due to financial constraints, schools are often unable to participate in many activities, as they must purchase sports clothing and other equipment. Consequently, these activities are either suspended or carried out with less qualified or cheaper equipment, often provided through the teachers' efforts. Darya exemplifies this:

*There is no support from outside, as the activities have been suspended in recent years. So, sometimes, we don't even get a ball from outside. One day, I needed 108000 IQD to buy clothes for a futsal; they told me that it was expensive, so I had to check for cheaper clothes. So, I went and bought cheaper ones and, of course, they don't consider transportation of the teacher. He must pay for this himself.*

According to the presentation of the results, the main similarities and differences between PE teachers from Finland and KRI are presented in [Table 2](#).

## Discussion

This study has identified several significant themes regarding the structural factors influencing PE in the KRI and Finland. The first theme concerns the sports facilities provided by educational institutions. In Finland, there is a strong emphasis on PE, as evidenced by the abundance of sports facilities available in schools. These facilities support a wide range of activities and promote inclusivity and diversity in PE programs, making them more than just locations for physical exercise. Strategically positioned on school property, these facilities underscore the importance of consistent physical activity for all students. This aligns with [Blom et al. \(2017\)](#), who asserted that fostering a culture of physical activity in schools is a key component of Finnish educational initiatives.

Another significant theme that emerged from the teacher interviews is adaptation to weather. The Finnish educational model exemplifies adaptability and flexibility in addressing climate-related concerns. Finnish teachers are equipped with the skills and resources necessary to turn adverse weather into teaching opportunities, allowing them to teach a range of sports and activities suitable for various weather conditions. This adaptability ensures that students receive PE classes throughout the entire school year, regardless of weather conditions that might otherwise disrupt classes. [Soini et al. \(2023\)](#) provided evidence supporting this approach, highlighting the emphasis in Finnish university curricula on training future teachers to deliver PE in diverse

TABLE 2 Main similarities and differences of Finnish and KRI PE teachers.

Main similarities between PE teachers from Finland and KRI	Main differences between PE teachers from Finland and KRI
<p><b>Impact of weather on PE classes:</b> Both Finnish and Kurdish PE teachers emphasized the significant influence of weather on their lesson planning. Bad weather affects outdoor activities, prompting teachers in both regions to adapt their plans accordingly.</p> <p><b>Seasonal lesson planning:</b> PE teachers in both regions adjust their lesson plans based on the time of year. For example, Finnish teachers plan outdoor sessions during favorable months, whereas KRI teachers prioritize indoor activities for most of the year due to climatic constraints</p> <p><b>Systemic challenges in PE education:</b> PE teachers in both Finland and the Kurdistan Region of Iraq (KRI) have highlighted systemic issues in educational institutions, though their approaches to addressing these challenges differ significantly.</p>	<p><b>Differences in student engagement and motivation:</b> Finnish and KRI PE teachers did not share similar views regarding student encouragement and engagement. Finnish teachers highlighted autonomy as a tool for motivation, while KRI teachers followed a teacher-centered approach with limited autonomy for student</p> <p><b>Weather-related adaptations:</b> Finnish PE teachers can use indoor gyms and alternative sports during bad weather. On the other hand, KRI PE teachers have limited indoor options, with overcrowded halls and large class sizes making PE lessons nearly impossible on rainy days.</p> <p><b>Sports facilities and student behavior:</b> Finnish teachers stress the importance of accessible sports centers in increasing student motivation. They also struggle with managing unmotivated students with behavioral challenges. In contrast, KRI PE teachers focus more on financial limitations as a key barrier to PE quality rather than student behavior.</p> <p><b>Financial constraints and PE quality:</b> Finnish PE teachers do not face significant financial barriers to teaching PE. Conversely KRI PE teachers have been impacted by the financial crisis since 2014, leading to a lack of resources for sports facilities, equipment, and activities, resulting in lower-quality PE lessons and reduced student well-being.</p>

contexts, thereby promoting children's enjoyment of movement and overall development. [Suwalska \(2021\)](#) also investigated the incorporation of cross-disciplinary skills into PE within the framework of the Finnish National Core Curriculum for Basic Education, emphasizing the adaptation to different weather and environmental conditions to offer students a comprehensive PE experience.

The third theme is the scheduling of in-school PE programs. In Finland, PE classes are meticulously planned to ensure that PE is given equal importance to academic subjects. This balance highlights the recognition of PE as a crucial component of students' overall education, personal development, and lifelong well-being. However, PE teachers often face challenges in scheduling sports halls due to overlapping class schedules, especially during the winter. Consequently, it is frequently necessary to schedule in advance. [Rämä \(2013\)](#) examined administrators' perspectives on the allocation of resources for PE in Finnish schools, aligning with this conclusion. The study emphasizes the importance of strategically allocating time and resources, particularly as indoor spaces are more in demand during the winter months.

Other important themes shaping the perceptions of Finnish teachers include social issues and the school atmosphere. The Finnish PE framework aims to preemptively address behavioral issues, foster enjoyment, and cultivate a positive learning environment. A strong support system that encourages student participation and cooperation creates a positive feedback loop, where organized PE classes enhance student conduct and promote a calm school atmosphere. This holistic approach reflects the systems perspective of PE as a crucial component of the overall educational framework.

Paananen et al. (2023) revealed that Finland's Positive Behavior Support (PBS) system underscores the country's dedication to social management and the development of positive learning spaces. According to Mihajlovic (2017), Finnish PE teachers employ inclusive teaching methods to ensure student engagement and create accessible learning environments for all students, including those with disabilities. Both studies highlight the high importance placed on social management and a friendly classroom setting in the Finnish educational system.

In contrast, PE teachers in the KRI face significant structural challenges that influence their teaching styles and perspectives. These concerns reflect broader systemic and societal issues, necessitating strategic solutions. Several key themes from this study emphasize the opinions and perceptions of local PE teachers. A prevalent concern among those surveyed is the underappreciation of PE programs in schools. Teachers observed that PE is frequently neglected in favor of other academic subjects, perpetuating the stereotype that academic subjects are more important than PE. This is evident in the organization of the school day and the limited space allotted to the PE curriculum. Teachers are calling for a curriculum change that elevates PE and recognizes its vital role in the overall development of students, thus highlighting its importance in schools' curricula. The lack of emphasis on PE not only restricts teachers' ability to develop comprehensive theoretical and practical lesson plans but also deprives students of the numerous benefits of engaging in physical activity.

The Ministry of Education's reforms and the establishment of a system for ensuring school quality in KRI are examined in detail in the report by Vernez et al. (2016). Although PE is not specifically mentioned, the report emphasizes the value of improved school supervision and data collection, which can be beneficial in assessing the status and quality of PE. Similarly, a study by Ali et al. (2021) focuses on KRI's educational policy, particularly regarding kindergartens. It highlights outdated curricula, a lack of funding, and inadequacies in teacher preparation and attendance. These systemic problems likely affect PE just as they do other subjects. Both Vernez et al. (2016) and Ali et al. (2021) agree that general concerns about curriculum, teacher preparation, and quality control may impact on the allocation of time and resources to PE in the KRI, even if the subject is not explicitly mentioned.

The second and most noticeable theme is the absence of facilities and equipment. PE teachers in the KRI face significant challenges due to a lack of resources. This deficiency not only diminishes the quality of PE but also affects the enthusiasm of both teachers and students. The report from the Education Consortium of Iraq (2021) provides an overview of the state of education, and highlights gaps in resources and infrastructure that need to be addressed by PE programs. The 2021 ECI report indicates that

insufficient facilities and equipment are symptoms of more serious infrastructure and investment problems.

The third theme is the absence of social support for physical activity. Teachers believe that parents and the public undervalue their work, underscoring the urgent need for campaigns to raise public awareness of PE and to garner support for funding sports and PE programs. Although few studies specifically address this lack of support, the general educational issues in the region provide insight into the challenges faced by PE teachers and the quality of PE instruction in the KRI.

While Bartels and Vierbuchen (2022) acknowledge the advancements made toward inclusive education since 2013, they also highlight the unpredictability of the educational system. The Ministry of Higher Education's initiatives to enhance teacher preparation demonstrate a commitment to improving teaching standards in KRI, particularly in PE. However, to ensure that every child has access to high-quality PE, there is a need for greater social support and specialized training for PE teachers. The narrow scope of structured education, such as PE, identifies the necessity for more extensive social support and targeted professional development for PE educators.

In the KRI, social values, family values, cultural norms, and academic emphasis are elements that influence attitudes toward PE. Although it is evident that youth are interested in PE in schools, this interest does not always translate into tangible benefits. Educational reforms and international aid mentioned in the literature suggest that improving the quality and status of PE requires an enhanced school system and programs. However, the paucity of targeted studies on social support for physical activity indicates a research vacuum that needs to be addressed to properly understand and solve the challenges faced by PE teachers and programs in the KRI.

Related concerns, such as the impact of weather and financial constraints, and the institutional and public perspectives, on PE classes, must also be addressed. The environment is often unsuitable for PE, and teachers report challenges in addressing these issues due to a lack of resources and support. Intemperate weather conditions and inadequate school infrastructure in the KRI necessitate the implementation of advanced adaptation strategies to maintain PE programs.

The lack of indoor facilities, such as sports halls, leaves students more exposed to extreme weather conditions, including very hot summers and cold winters. Financial constraints also significantly impact the quality of PE. Due to limited investment in facilities and budgetary restrictions, teachers can lack sufficient support and morale. The recurring concerns over limited investments in facilities, tools, and teacher preparation emphasize the need for immediate action to address these problems in the field of PE.

Extreme temperatures can interfere with physiological processes, such as muscle contraction, increasing the risk of injuries. Weather patterns have a major impact on sports performance, as demonstrated by Rao and Mohan (2021). Although outdoor sports are more vulnerable to the adverse effects of weather, indoor sports are also affected by both favorable and unfavorable weather patterns. Chan and Ryan (2009) examined how different weather factors, such as precipitation and wind speed, affect people's levels of physical activity. They suggested that a deeper understanding of these impacts could guide the creation of effective mitigation strategies, noting that inclement weather was a factor preventing participation.

Moreover, PE teachers from KRI identified financial constraints as a significant problem affecting their classes. The KRI education system faces challenges due to financial constraints, especially in PE, as noted by both [Ahmed and Any \(2022\)](#) and [UNICEF \(2023\)](#). These financial challenges affect the quality of PE programs, limit the availability of necessary equipment and facilities, and reduce teacher morale and support. Addressing these financial issues is critical to improving the status and effectiveness of PE in the KRI.

[Ahmed and Any \(2022\)](#) and [UNICEF \(2023\)](#) confirm that insufficient funding is the root cause of the shortage of educational resources and facilities, which in turn affects the quality of PE programs. Schools are less financially able to provide necessary facilities and sports equipment. Additionally, the economic recession has impacted teachers' salaries, causing them to be more concerned with daily life expenses than with their career development, thus creating a passive learning atmosphere. These budgetary restrictions highlight the more significant financial issues that the KRI educational system is currently facing, which impede the advancement of PE. Increased financing and meticulous financial planning are essential to ensure the growth and sustainability of PE programs in KRI schools.

This study investigates the ways in which structural factors affect the teaching of PE in Finland and the KRI. It closely examines how funding, support networks, curriculum requirements, and policies impact PE teachers' professional growth and classroom experiences. The study aims to provide a thorough understanding of how PE teachers from Finland and KRI adjust and react to different challenges by exploring these crucial components. While a study on the challenges faced by Finnish and PE teachers in KRI is important, it does not address all of the factors that affect PE globally, which is an issue with enormous potential for affecting accessibility and effectiveness.

Different educational systems across the world employ various strategies to address institutional competencies at different levels. Comparing the situations of PE teachers in Finland and the KRI should consider the significant differences in their sociocultural backgrounds, in addition to their unique educational systems. Despite these distinctions, it appears that teachers from both Finland and the KRI value PE similarly, recognizing its role in helping students develop social and health skills. The contrast between PE teachers in Finland and the KRI highlights how distinct environmental factors significantly influence the creation of conducive learning settings, emphasizing the importance of these factors even more.

The current study shows significant differences between teachers' perspectives in Finland and the KRI. In Finland, PE teachers seem to work in a supportive environment that promotes a positive view of their profession. In contrast, PE teachers in the KRI face numerous difficulties that affect their viewpoints, motivation, and PE teaching. This, in turn, impacts the positioning of PE within schools and the broader educational landscape. These findings are highly significant for forming educational systems and policies. The analyses of Finnish PE teachers demonstrate the effectiveness of current approaches and suggest that further advancements in PE could lead to better student lifelong well-being.

The results underscore the critical need to strategically modify the KRI educational system to improve PE and address the current resource constraints impeding effective implementation. Incorporating modifications of the Finnish model into the KRI's

sociocultural framework might improve the quality and efficacy of the PE education program. Such a plan could facilitate the advancement of the field throughout the region and assist PE teachers in the KRI in overcoming their challenges.

According to the results of the study, significant changes to the PE curriculum are necessary to improve learning spaces in both regions, particularly in the KRI. These changes are designed to inspire students to adopt regular exercise routines by emphasizing the importance of starting healthy lifestyle habits through physical activity. PE programs aim to teach vital life skills, such as patience, self-control, and collaboration, in addition to improving students' physical fitness. PE is essential for improving students' mental health ([Lubans et al., 2016](#); [Malinauskas and Malinauskiene, 2021](#)) and preventing a sedentary lifestyle ([Abdullah et al., 2014](#); [Maina et al., 2016](#)). Furthermore, PE promotes adolescents' overall health, providing opportunities for collaboration, social interaction, and leadership development ([Roccliffe et al., 2023](#)).

This comprehensive study aims to enhance the accessibility, inclusivity, and integrity of PE programs in both regions by offering a framework for practical interventions and strategic planning. According to the findings, developing PE pedagogy and supporting personalized learning models require an awareness of social and cultural nuances. These models address the objectives and unique challenges that PE teachers encounter in different contexts.

Finland's educational policies, which are designed to create optimal spaces for PE, have a significant impact on PE teachers in the country. Finnish teachers are equipped with the necessary tools to provide high-quality instruction. Further evidence of Finland's dedication to physical literacy as a critical component of comprehensive student development is evident in the seamless integration of PE into broader educational goals ([Ahtiainen et al., 2021](#); [Viesca et al., 2022](#)).

By incorporating insights from Finland's effective PE strategies into the KRI's sociocultural framework, it may be possible to greatly improve the quality and effectiveness of PE programs in the region. This approach could help overcome current challenges and promote the development of a more supportive environment for PE, benefiting both teachers and students. A comparative study of Finnish and KRI PE teachers showed that while the Finnish PE teachers highlighted the importance of providing student autonomy ([Lagestad et al., 2024](#)), KRI teachers seemed to organize their teaching in a way that decreased autonomy. Here, we point to the use of [Ahmadi et al.'s \(2023\)](#) classification of teacher behaviors that support or thwart students' psychological needs, and the importance of improving teacher autonomy-supportive behaviors in KRI.

## Implications of the study

The perceptions of PE teachers in Finland and the KRI significantly influence how PE teaching takes place, as highlighted by [Svendsen and Svendsen \(2014\)](#). In their Danish study, they emphasize the importance of the discourses that affect PE teachers' perceptions and their organizational choices for PE classes. The optimistic outlook of Finnish PE teachers suggests a nurturing atmosphere that serves as a model for other domains. The Finnish approach showcases the benefits of comprehensive support systems

and highlights the advantages of incorporating PE into a larger educational framework. In contrast, the difficulties faced by PE teachers in the KRI underscore the urgent need for infrastructure upgrades.

Considering these observations, we suggest improving the standing of PE within the educational system to promote more optimistic views and enhance student performance. Finnish teachers should continually assess and adapt their support systems to keep up with the evolving demands of PE teaching. An international exchange of best practices could contribute to the global improvement of PE. To raise the standard of PE, policymakers in the KRI need to develop thorough frameworks and allocate sufficient funding. The advancement of PE within the academic sphere depends on investments in infrastructure and teacher training. Professional development programs emphasizing creative pedagogy and flexibility in the face of structural shifts would benefit both regions. The field of PE could also gain from a valuable exchange of teaching philosophies and techniques facilitated by cross-regional collaboration in educational strategies. For further improvements in PE teaching in KRI, the Ministry of Education in the KRI should reconsider certain requirements, such as fundraising, developing PE curriculum design and more autonomy-supportive PE.

## Recommendations

As this study is conducted, the researchers provide several recommendations that can help Finland and the KRI enhance their PE curricula.

**Finland:** While many schools have good facilities and infrastructure, it is recommended that they be further improved, ensuring that all PE teachers have access to sports facilities. Furthermore, considering this comparative study, PE classes can be improved in a variety of ways including students' participation and the attitudes of the PE teachers. It provides useful comparisons between different cultural backgrounds that can be applied to improve the curriculum of PE.

**KRI:** To ensure a comprehensive and well-organized program, the curriculum of PE for primary schools needs to be revised and updated, addressing the current situation regarding structural components. At KRI, it is recommended that the Ministry of Education helps schools address these problems. Our findings indicate that the PE teachers' capacity to organize and accomplish their objectives is significantly hampered by the absence of indoor and outdoor facilities. A gym or sports area is an important indoor facility for PE. We also strongly advise setting aside specific spaces for student accommodations and changing rooms during PE classes particularly for female students. The lack of these resources makes it extremely difficult for PE teachers to motivate their students to participate in class. Finland and other Nordic countries are known for having a good educational system. From this perspective, the KRI Ministry of Education should take into consideration the implementation of some of the PE systems in these nations within the curriculum.

## Limitations and future exploration

Future research projects should consider the perspectives of PE teachers in both Finland and the KRI. Subsequent research endeavors should focus on how structural support impacts both students' academic performance and the long-term outlooks of PE teachers. Cross-regional comparisons could potentially provide further insights into the global status of PE. Understanding the influence of social and cultural factors on PE teachers' perspectives and instructional approaches could lead to practical solutions for systemic change. Comprehensive research on the effects of policy elements, such as funding allotments and curriculum requirements, could produce compelling evidence supporting enhanced PE teaching strategies. These findings may help target interventions aimed at improving the effectiveness and capacity of PE training. Furthermore, we point to the use of the improvement of teacher autonomy-supportive behaviors in KRI (Ahmadi et al., 2023; Ligestad et al., 2024).

Integrating Finnish sports education techniques could significantly improve the KRI PE curriculum. Important considerations for this integration include ensuring smooth policy coordination, easy access to resources for teacher preparation, and alignment with KRI's social values. Effective management of these factors is necessary for the successful application of Finnish teaching techniques. Potential advantages include enhanced student performance, equitable access to sports education, higher teaching standards, and continuous professional development for teachers.

## Conclusion

The structural elements impacting the divergent worldviews of PE teachers in Finland and the KRI were examined, and the results showed some major discrepancies. While Finnish teachers operate in a supportive environment, their teachers from KRI counterparts face substantial obstacles that hinder their ability to advance professionally and provide high-quality PE instruction. PE teachers from KRI emphasized the need for schools to have a strong structural base, citing the impact on student achievement and the efficacy of PE programs. They noted that many schools are critically affected by a lack of funding for sports facilities and equipment. However, Finnish teachers expressed concerns about scheduling sports facilities and the accessibility of equipment and facilities in relation to weather. These findings will significantly impact on the rules and regulations governing education. More innovations in PE, according to the Finnish model, may improve student health and increase the efficacy of current strategies.

The comparison between PE teachers' reflections and perceptions in Finland and the KRI arises from their views on the purpose of PE and its positioning within schools and society. Structural influences affect how PE teachers perceive their subject, their role as educators, and their teaching methods. Comparative studies suggest that social, cultural, and financial support strategies can sustainably enhance the status of PE classes and education. The goal is to foster enjoyment and engagement in PE, promoting lifelong physical activity, which is essential for a healthy society.

To strengthen PE's position and address the resource gaps currently hindering its effective implementation, curriculum development and policy changes in the KRI are urgently needed. Taken together, these findings support significant modifications to PE that may raise the standard of instruction in both regions. By implementing effective policies and addressing structural challenges, we can enhance the academic success and long-term well-being of students in PE. Collaborative comparative studies and international partnerships can further support these advancements. Future research could also focus on developing and testing self-determination-based interventions with autonomy in PE.

## 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 Finnish National Board on Research Integrity. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

WM: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Software, Validation, Writing – original draft. JK: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Validation, Writing – review and editing. GM: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Validation, Writing – review and editing. PL: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Software, Validation, Writing – review and editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The authors declare that no Generative AI was used in the creation of this manuscript.

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