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“Reflective practice” in physical education

Didactic interferences between movement practices and intellectual practices from the perspective of physical education teachers in Germany

The evolution of physical education (PE) is a story of perpetual justification. In the beginning, movement activities served to legitimize the significance of PE in school curricula (e.g., gymnastics and regimented exercise, major team sports, fitness for war, activity-only basic instruction classes). However, since the 1950s, approaches have emerged in different countries seeking to tap into the physical and cultural practices of sports and to connect PE more closely with the general orientations of the school system (Phillips & Roper, 2006). One approach is to increase students’ cognitive engagement in PE. This “intellectual turn” is exemplified in concepts of physical literacy that see knowledge and understanding as central to a responsible, physically active lifestyle (Ennis, 2015); in conceptual PE programs that combine physical activity sessions with textbooks and classroom sessions to teach principles of physical fitness and health-enhancing physical activity (Corbin, Kulinna, & Yu, 2020); in proposals to establish critical thinking as one of the main developmental tasks of PE (McBride, 1992); in the idea of making cognitive activation a key dimension of teaching quality in PE (Wibowo, Krieger, Gerlach, & Bükers, 2021); and in the principle of “reflective practice,” which posits that teaching and learning in PE are driven by an interpenetration

of doing and thinking (Serwe-Pandrick, 2013).

These approaches highlight the relationship between operational modes guided by movement activities and operational modes ruled by intellectual activities in PE. On a normative and theoretical level, the claims of intellectual learning are clearly formulated and anchored in school curricula. On the practical level of everyday teaching, however, there is evidence that these concepts have not been adequately realized (Armour & Harris, 2013; Hapke, 2018; Lüsebrink & Wolters, 2017; Serwe-Pandrick, Wolff, & Frei, 2019): Movement activities are forced to compete for time with intellectual activities (Chen, Zhu, Androzzi, & Nam, 2018; Poweleit, 2021), while the implementation of intellectual activities often seems to be “too much to ask of teachers” (Balz, 2021, p. 18).

This forms the starting point for the present article. As a case study in German PE, we explore the (precarious) interrelationship between movement activities and intellectual activities that exemplifies the various approaches that make up the “intellectual turn.” Based on a praxeological framework, we focus on practices of teaching and learning in PE lessons, in which movement activities and intellectual activities interfere didactically. The aim is to focus attention on a specific principle of sport pedagogy (Serwe-Pandrick,

2013) by looking at the implicit practical knowledge and action-guiding orientations of the actors involved. Therefore, we conducted expert interviews with PE teachers who tried to implement “reflective practices” in PE as part of a subject development project. We reconstructed how the different demands of movement learning and intellectual learning were represented in the orientations of PE teachers, and how they were incorporated into practices of teaching and learning.

Interfering practices as a heuristic of praxeological classroom research

Praxeological classroom research deals with situated social events, in which participants indicate through their practices that these are school lessons focused on learning (Kemmis et al., 2017; Röhl, 2016). Grounded in sociological theories of practice, it focuses on the “aggregate level of the social” (Proske & Rabenstein, 2018, p. 9), for instance, everyday actualizations, immanent structures, interaction processes, collective orientations, and cultures. In this context, school-based learning is conceptualized as a complex interplay of practices structuring objects of learning, task processing, and interactional organization (Breidenstein & Tyagunova, 2020). According to Schatzki (1996, p. 89), social

practices are a “temporally unfolding and spatially dispersed nexus of doings and sayings,” that is, a routinized stream of interrelated activities into which people and their bodies, signs, spaces, and other artifacts may be integrated (Reckwitz, 2003). The social is therefore situated in the actualization itself and is governed by practical knowledge and skills. The practical knowledge and skills are a *knowing how*, consisting of “practical rules, understandings, teleoaffective structures, and general understandings” (Schatzki, 2012, p. 14) and are understood primarily in an implicit and incorporated way.

Social practices follow a specific logic of actualization that can be analyzed empirically (e.g., in terms of the qualities, internal dynamics, and functions of the set of activities under observation). At the same time, the social world is constantly creating a diverse nexus of practice in which individual practices are “linked” in interrelationships that need to be analyzed (Reckwitz, 2003, p. 295). For praxeological classroom research, Breidenstein (2021) proposes a heuristic utilizing the physical phenomenon of interference. In physics, interference describes a phenomenon in which two or more waves (e.g., sound, light, water, matter) combine to form a wave of greater, lower, or the same amplitude. Transferred to praxeological classroom research, this suggests focusing on interactions of different practices that encounter in situated actualizations of lessons in school and visualizes the effects that occur when practices converge and overlap. For its empirical reconstruction, it is first necessary to identify relevant practices and to analyze them in their inner logics of actualization (e.g., involved participants, modes of cross-situational stabilization, basic reference problems). As lessons in school are largely based on subjects (Tenorth, 1999), practices focusing on subject-based teaching and learning are of particular interest. Subsequently, the relationship of the identified practices has to be analyzed (Breidenstein, 2021).

PE in Germany: subject cultures at the nexus of sport and school

Historically, practices of teaching and learning in German PE follow a persistent and efficacious subject-cultural genesis. In Germany, PE emerged as a distinct subject culture devoted primarily to bodily training and thus fulfilling an exclusive purpose within the school system. Its identity as a school subject was also shaped by the nineteenth century critique of schools and their “overburdening” of students. Physical education was thought to compensate for the other subjects by providing variety and a sense of identity in the face of instruction that was fixated on the acquisition of knowledge. Programs in reform pedagogy, the new education movement, and medical critiques of schooling reinforced this discourse. They laid the foundation for modern neurophysiological and psychological reinterpretations of physical activity instrumentalizing PE in the service of cognitive subjects (Schierz & Serwe-Pandrick, 2018). This historicity of PE as a school subject and its cultivation through specialized subject research continue to shape and define the orientations of the actors involved to this day. On a performative level, practices of teaching and learning in PE are infused with “hybrid contextures” in that formations of sport can be identified that are embedded in the institutional framing of school (Schierz, 2012).

In Germany, there have always been various didactic approaches to PE (Balz, 2009) that shape the different readings of the subject. These readings repeatedly raise the question regarding the relationship between intellectual and movement activities in PE classes and currently leads to a noted research strand, which discusses different intellectual approaches (e.g., Ernst, 2018; Gogoll, 2013; Kurz & Schulz, 2010; Schierz & Thiele, 2013; Serwe-Pandrick, 2016; Thiele & Schierz, 2014; Wibowo et al., 2021). The principle of “reflective practice” in PE is one recognized example (Serwe-Pandrick, 2013). It has been part of curricular policies, academic discourses, and institutionalized practices in PE for almost 10 years. It addresses the question of how students’

bodily and social learning experiences in movement practices can be recursively objectivized and symbolically mediated through knowledge-based reflection in the classroom (Ehni, 1977; Schierz & Thiele, 2013; Serwe-Pandrick, 2013).

The principle of “reflective practice” refers to a fundamental tension in the subject culture of PE. Traditionally, PE in Germany has been contoured around the culture of sport and its essentially practical mode of operation. It therefore exemplifies a subject that “turns against reflective aspirations, developments, and demands in ‘modern’ scientific subjects” (Thiele & Schierz, 2014, p. 14). Yet the intellectual orientation that is inherent in the principle of “reflective practice” also orients PE toward the broader meaning of school culture, providing it with a mode of operation that is aimed at imparting knowledge and guided by the general pedagogical objectives of the school system (Schierz, 2012). In the subject culture of PE, these “disparate contexts” (Thiele & Schierz, 2014, p. 15) lead to overlapping orientations of action as well as conflicting expectations toward the role of PE teachers (Ernst, 2018). On a programmatic level, the disparate nature of the two modes of operation is evident in current discourses around reflexivity in PE, whether in the distinction between capacities for operative and reflective action (Gogoll, 2013; Schierz & Thiele, 2013), in the tension between “claims of doing and the revolt of thinking” (Serwe-Pandrick, 2016), or in polemically simplified terms as a decision between “chatting or doing gymnastics” (Krüger & Hummel, 2019). In any case, it represents a moment of “provocation and questioning of identity in the subject of PE” (Schiller, Rode, & Serwe-Pandrick, 2022).

In this context, the interest in empirical reconstruction of “reflective practices” in German PE has increased significantly in recent years (e.g., Lüsebrink & Wolters, 2017; Serwe-Pandrick et al., 2019; Wegener, Herder, & Weber, 2018). When it comes to didactic questions about the relationship between movement activities and intellectual activities, however, multiple research gaps still exist. Here, praxeological classroom research has ground-

breaking potential to reconstruct the interfering logics of a “reflective practice” in PE in more detail.

Intellectual reserves and movement reserves in PE

Gruschka (2013, p. 17) refers to teaching as a “meaning-structured practice” that is characterized by a relatively established, stable setting when in a kind of normal mode. This normality becomes central when “reforms aim at unsettling or changing it.” The mode of reflexivity disrupts the “normal mode” of PE, a subject that is typically understood as exclusively practical as opposed to academic or intellectual. “Reflective practice” thus refers praxeologically to a concurrence of different inherent logics of didactic operations on the one hand, and to the associated hybrid phenomena of convergence and overlapping on the other. This article examines their logics of actualization with regard to interactions, the conflicting and coinciding demands they impose on PE teaching, and the practices of teaching and learning (Breidenstein, 2021). To this end, we focus on the precarious relationship between movement activities and intellectual activities in PE to explore intellectual practices stored in “conversation reserves” (Wolff, 2017, p. 271) and their logics of actualization and overlaps in PE in a more differentiated way. While there is a relatively large body of research on movement reserves in which movement practices in PE are contextualized, their framings, pedagogical and didactic formats, and educational moments, there has been little research to date on intellectual reserves, their realization, and the interference between movement practices and intellectual practices in PE.

Reserves can be understood as distinctly demarcated areas with separate realms of authority (Goffman, 1971) that can leave their typical practical form and norm behind to take on new structures in relation to the subject at hand. These practices and artifacts are significant to the pedagogicity of teaching and learning in PE. Being one of only a few researchers, Wolff (2017) touches on this idea in a micro-sociological study of practices that are performatively inscribed

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Abstract

Physical education (PE) is rooted in a historically evolved subject culture that goes largely unquestioned in everyday teaching and learning. It is characterized by a normative primacy of movement practices, placing it in a precarious relationship with the intellectual practices required by sports pedagogy and school curricula. The present case study is based on praxeological classroom research and examines how didactic interferences between intellectual reserves and movement reserves are represented in the principle of “reflective practice” in PE. To reconstruct key orientations toward the interfering practices of teaching and learning that guide teachers’ actions, we conducted six expert interviews in a PE development project in North Rhine-Westphalia (Germany) and analyzed the interview data based on the coding procedure of grounded theory.

The reconstructed orientations guiding PE teachers’ actions can be described according to three key dimensions: On the temporal level, one key interference is the scarcity of time for movement. On the spatial level, the space of the gymnasium often stands in the way of establishing and routinizing intellectual practices. On the media level, the use of written forms in PE classes appears to be regarded as a requirement that is imposed upon teachers and that should be kept to a minimum. The results are particularly relevant to research on the institutional professionalization of PE teachers.

Keywords

Subject culture of physical education · Teaching methodology · Movement time · Cognitive activation · Sport pedagogy

and encoded in PE in line with its subject culture. He looks at movements, positioning, signaling, and verbal forms of communication, but also at specific aspects such as the gymnasium, the equipment, and the lines demarcating the playing field. A specific aspect of the subject culture of PE is that when entering the space of the gymnasium, “the actors do not only change their clothes but are also divested of their typical learning materials (e.g., pencil cases or workbooks)” (Wolff, 2017, p. 7). However, the incorporation of blackboards, whiteboards, worksheets, and books into practices of teaching and learning is relevant to intellectual practices and, therefore, to the didactic development of a “reflective practice.” In PE, Wolff (2017) identifies specific conversation reserves in which situational attention is generated and knowledge-related arguments are consolidated through interaction. The “practical entanglement of sociality and materiality” (Röhl, 2015, p. 163) in these reserves seems particularly important for sport pedagogy, where not only “objects in action” (e.g., in movement practices), but

also “objects in speech and writing” (e.g., in conversational reserves) are a focus of investigation (Röhl, 2015, p. 166). As PE classes are not held in the classroom and are dominated by a culture focused on action-related objects, the role of knowledge-related objects marks an emerging area of PE culture that requires closer empirical examination, especially regarding its potential interferences with movement practices. Objects of knowledge are used as part of a “reflective practice” with the aim of increasing reflection in PE. Further investigation is therefore needed into how intellectual practices affect the “skillful performance” (Wolff, 2017, p. 9) that is fostered by PE culture, and what meanings and interferences these intellectual reserves create for PE students and teachers, particularly in light of the traditional orientation of PE toward movement reserves.

Materials and methods

In accordance with this study’s aim and praxeological methodology (Röhl, 2016), qualitative materials and methods were

used. To reconstruct the implicit practical knowledge and the orientations guiding PE teachers' actions, we conducted six expert interviews (Meuser & Nagel, 2005). This type of interview addresses the interviewees as experts of their professional field and allows us to reconstruct patterns of professional interpretation. To gain understanding of PE lesson practices mediated by teachers' descriptions, the interviews were conducted narratively (Nohl & Somel, 2016).

The interviews were conducted in a PE development project. The project, in which the first author acted as a scientific advisor, was being carried out as part of the implementation of the most recent competency-oriented PE curricula in North Rhine-Westphalia (Germany). It aimed at addressing areas of development identified in previous studies on instructional quality (e.g., Kurz & Schulz, 2010) as requiring didactic action and research on the subject culture (e.g., integration of theory and practice, "reflective practice", formative assessment; Serwe-Pandrick & Thiele, 2012). The participating teachers (five men, one woman) worked at five high schools and one comprehensive school and had between 3 and 26 years of professional experience at the time of their interviews. All interviewees can be considered highly committed and open to innovation and have worked on other development projects with the ministry responsible for this project. The interviews were conducted by the first author of the study immediately after the end of the project. All interviewees provided voluntary written informed consent to participate in the interviews. Confidentiality was guaranteed to all interviewees. Interviews averaged 60 min in length. All interviews were audio-recorded and transcribed verbatim.

An interview guide was developed that served primarily to provide orientation in the interview situation (Meuser & Nagel, 2005). It was used in a flexible way to give the experts opportunities to decide for themselves what they wanted to focus on in the interviews. Throughout the interview, the interviewer gave the interviewees prompts to recount the facts and situations in their own way, invited them to give examples and additional de-

tails, or asked them about the theoretical underpinnings of their interpretations (Przyborski & Wohlrab-Sahr, 2014). The guide covered the following topics: taking stock of a planned lesson after implementation, development of students' competencies, possibilities for individual learning in the planned lesson and use of learning tasks, intellectual practices and objects of knowledge, specific strategies for linking theory and practice, and comparison with traditional PE. In addition to the interviews, a demographic questionnaire was completed by the interviewees, and an interviewer memo was written reflecting on the interview.

We evaluated the data based on the coding method of grounded theory (Corbin & Strauss, 2014). We aimed at identifying knowledge shared by the entire group of these PE teachers without losing sight of specifics of the individuals (Meuser & Nagel, 2005, p. 86). Our evaluation was thus oriented toward passages that fit together in terms of content and were found scattered throughout the texts. In a first step, we paraphrased individual interviews and transformed them into a thematic overview. In a second step, we compared the interviews thematically. In the analysis, we first used open coding and then identified connections between categories and concepts with the axial coding procedure (Corbin & Strauss, 2014). In a final step, we established systematic relationships between the preliminary concepts assessed (e.g., praxeological perspectives on teaching and the culture of PE, didactic lesson development) on the one hand and the empirical data on the other to provide recursive theoretical reflection on connections and complexes of meaning.

Results

Our analysis of the interviews revealed the PE teachers' implicit practical knowledge and action-guiding orientations, which appear essentially as a composite of three key dimensions.

"Learning" time: the imperative of time for movement

Intellectual reserves are clearly distinguished from movement reserves in that they cultivate different subject-specific themes and modes of understanding the world and imparting knowledge. The factor of time appears as a key criterion for teaching and scarce resource, thus marking a significant interference problem.

"The most striking thing was actually [...] the fact that I was always thinking about giving them as much time for movement as possible." (ESP_05, teacher_m, 5th grade)

Whereas students are "given" as much "time for movement" as possible, apparently as a kind of basic need fulfillment, more intellectually challenging phases appear to be "taken away" from the limited time available. Time is judged to be valuable if it is filled with movement practices, with no need to specify the nature and quality of the movement practices taking place. Time invested in intellectual practices and stored in intellectual reserves therefore demands effort or requires that students give up something. This is compensated for through classic rituals of reparation. The culture of PE exhibits a clear demarcation from traditional school practices (Gruschka, 2013), possibly due to the excess of typical classroom modes of sitting, thinking, reading, and writing. The perceived imposition of theoretical segments on the class and the physical discipline of stopping and reflecting is usually followed by a hasty concession to movement in the sense of cyclical alternation, or intervals between work and relief.¹

"I think it went well in terms of time. At least that's my impression. I mean, if you were to evaluate the videos, of course you could analyze exactly how much the stu-

¹ This problem of interference in the culture of physical education extends into the upper grades of school, where the curriculum is focused on scientific propaedeutics: *"We now work almost exclusively on motor skills up to Christmas just to compensate for that a little, because I had the impression it was a bit heavy on theory." (ESP_02, teacher_m, 13th grade).*

dents were moving and how much they weren't moving. Maybe I'd be surprised. But at least I feel that they weren't sitting too much." (ESP_05, teacher_m, 5th grade)

The question of the relevance of these teaching and learning practices undergoes a kind of objectification from the teacher's point of view. The teacher seeks to verify the appropriateness of the interference between intellectual and movement practices in quantitative terms based on the amount of movement time in the video data collected in another part of the research project. How much time is invested in which activities and whether the wave of intellectual practices or movement practices is perceived to be of maximum or minimum intensity is already a statement about instructional development in the culture of PE. From the teacher's viewpoint, a PE lesson "went well" in terms of its time structure if the students were able to take part in the class in a normal mode, without being interrupted "too much." Despite the project and the increased implementation in intellectual practices that it brought about, the teacher was "always thinking about" ensuring that a critical mass of professional traditions was being maintained. The teacher also did not want to fundamentally shake any expectations students may have had. This ambition reveals the deep normative anchoring of the primacy of movement in the culture of PE and in the orientations that guide the practices of teaching and learning. The interpretation of intellectual practices as posing a "burden" to students, and the resulting strategy of reducing the intensity of these practices, becomes especially clear in the middle grades of school. Students' comments are brought up immediately to relativize (excessively) high demands and to set publicly legitimate boundaries defining what demands can be considered acceptable. The teacher describes these demands in reference to their pedagogical justification as necessary but also difficult to achieve.

"Well, I don't think teaching theoretical content is irrelevant. However, I am a pro-

ponent of a high proportion of movement, and I've also tried to put that into practice to some extent here. Especially in anything below the upper secondary level, in all the lower secondary level classes, they actually start complaining pretty quickly if the theoretical part is too big. Right away you hear: 'We sit around too much, we spend too much time talking.' So, you become very aware of it. And, yes, if you manage to get in a few basics like here, in—I'd say—three or four phases of the lesson, where you squeeze in reflection phases, discussion phases, or let students work through theoretical content with a partner or in a group while also providing some kind of motor incentive, then I think it's okay. And in my opinion, it's a necessity given the aspirations we have to have as PE teachers, because we have to legitimate ourselves again and again. However, still, in my opinion, the movement part has to make up the large part—also considering that this is the only movement that some of our students get." (ESP_04, teacher_m, 9th grade).

Despite not being opposed to intellectual practices—due to the "significance" of teaching theoretical content—this teacher is an explicit "proponent" of a high proportion of movement, and thus an advocate for the body. Underlying this stance are critical arguments about the negative effects of a sedentary childhood, on the special status of PE as a movement subject, and on movement as a counterbalance to the intellectual "overburdening" of learning. On the surface, these arguments act to lend meaning as well as create a dilemma of legitimacy between movement practices and intellectual practices in PE. The teacher's statements about the sovereignty of the body and the need to compensate for deficits in education as ideas that guide teaching practice reveal a mode of cultural value in PE. However, since cognitive learning appears as a "necessity," in the sense of an institutionally imposed requirement, it undoubtedly forms an important point of orientation but does not reach maximum intensity.

Ultimately, this view of interference between intellectual practices and movement practices is rooted primarily

in a structural coherence that we identified in the pattern of organizational processes as the "parts" of a lesson. From the teachers' point of view, these parts appear more or less harmonious to teachers depending on their relative size and intensity within the PE lesson design. Reference is not made to qualitative, content-related criteria that could determine the relationship and didactic connections between intellectual and movement practices but to quantitative, structural criteria. The traditional performance of bodily activation in PE lends this means of generating structure its culture-defining impact. Intellectual practices (e.g., conversations) that recur in wavelike fashion are primarily "squeezed in" to the mainstream practice of movement activities to meet the demand for a physically and intellectually challenging PE lesson. The goal seems to be to repeatedly reaffirm the normative content of a "subject of movement"—despite these insertions—through the established practices of PE.

The recursive repetition of social practices directs attention to the actors and their incorporated, action-guiding orientations as bearers of ritualized practices in the social structure of PE classes.

"I would say it has something to do with how students are used to PE classes taking place. I think it's hard to impart information and knowledge if students are saying: 'We don't care about theory and that kind of thing in PE.' So, if they know from the outset, 'Okay, we take our workbooks with us when we see our PE teacher, and every now and then there's something theoretical, once in a while we get worksheets, once in a while we do little written exercises and try to get a little knowledge, a little background knowledge,' then I think it's no problem at all. On the other hand, if they're used to just having a ball thrown in the center and playing football, it's difficult to get them to be willing to acquire theoretical background knowledge at all." (ESP_04, teacher_m, 9th grade).

Students' wariness and fear of the unfamiliar—a potential rejection of practices that are unusual in PE—is not understood here in relation to students' core

needs or to anthropological or medical explanations for these needs but is instead explained with reference to teachers' own aspirations and professional culture. What students are required to achieve depends on the specifics of the subject, the corresponding learning culture, and—a point that is explicitly emphasized here—on the PE teachers' aspirations and professional culture. The comment that “our PE teacher” uses materials and topics that are typical of school refers to a distinction from other teachers of other subjects and a habitus of PE teachers that does not necessarily elevate intellectual practices to the status of normality. The idea of distinguishing themselves in this way is also something that motivates the teachers interviewed in this research project. However, it remains striking that intellectual practices only make their way onto the agenda here quite cautiously and in a minimalist wave—“a little exercise,” “a little knowledge,” “every now and then,” “once in a while”—while disrupting the intensity of movement practices as little as possible. In the best case, intellectual practices provide constructive support and orientation for the learning process in this subject.

“It was a special incentive for me to actually undertake this attempt to connect the act of putting emotions or ideas or insights into writing with practice, and to do it in such a way that the primacy of movement is maintained and yet something sticks in these young minds or insights are gained.” (ESP_06, teacher_f, 6th grade)

In regard to the pedagogical objective, the teacher emphasizes processes of physical and motor education—seen in her normative pledge to uphold the “primacy of movement”—with the intention of maximizing movement practices. At the same time, the teacher aims to foster the development of theoretical knowledge through reflective intellectual practices. Her more pragmatic approach to these practices is obvious, however, especially when the contextual factors are unfavorable (e.g., noise from activities in neighboring gyms). “As short as possible” becomes an important criterion for the implementation of intellectual prac-

tices stored in conversation reserves in the lower grades. From this teacher's point of view, an “appropriate” ratio for PE in these grades is at least 80% physical activity (ESP_06, teacher_f, 6th grade). The higher priority placed on movement practices determines how PE is taught and how the lessons are developed didactically. Intellectual practices such as reflective writing, reading, and argumentation are introduced into the structure of PE classes as a challenging “attempt” to strengthen and improve the education provided and the knowledge generated in this subject, thus creating a new threshold of interference.

“Learning” space: resistant gymnasiums

The supplemental character of intellectual practices is also evident in teachers' descriptions of specific features of the institutional learning space. The gymnasium and the traditional practices of PE classes in schools do not provide an established culture for reflective discussions. Basic social orders of communication in PE (e.g., room arrangements, rules for who is allowed to speak and when, direction of attention, materiality) must first be developed and consolidated in conversational reserves, particularly in the lower grades of school. This means that a great deal of time must be invested in implementing these practices.

“The surrounding conditions were otherwise very poor for phases of discussion in the series of lessons. In some cases, there were other classes taking place in one or both neighboring gyms, making it incredibly difficult to discuss certain theoretical content with students and to go over the most important points to make sure that everyone understood. That simply wasn't possible in the gymnasium. One might have to consider other forms of organization, where maybe I as a teacher would have them work on everything in small groups and then have little discussions with each of the small groups while the others continued with movement activities.” (ESP_06, teacher_f, 6th grade)

Due to the loud noise from neighboring gyms (e.g., sounds of music, shout-

ing, running, balls bouncing), conversation phases often had to be inserted into the lesson spontaneously when the other classes were engaged in quieter activities, or had to be interrupted spontaneously when it seemed impossible to communicate acoustically in the planned plenary discussion. Instead of alternating formats, the teacher advocates for having movement practices and intellectual practices take place simultaneously to reduce the size of the groups involved. Conversational reserves would enable space to be reduced, students positioned more closely, and attention more focused. The teacher seeks pragmatic solutions to the poor acoustics and concentration issues arising from the permeability of the space—not by creating clearer breaks or hierarchizations in the disrupted plenary discussion but rather by implementing economizing strategies of hybridization and decentralization. By placing intellectual practices and movement practices side by side through “little discussions” in small groups and conversation formats, the teacher seeks to place the two types of practices on equal footing, both temporally and practically. This parallel structure contributes to a constructive interference between the intellectual practices and movement practices of the different groups in the class. Density in small group discussions is seen as an aspect that can be optimized to direct attention effectively and maintain flexibility in phasing the social practices of teaching. In addition to classic forms of oral communication, the teacher mentions other intellectual practices such as “putting (impressions or ideas) into writing” that appear feasible despite the acoustic issues, whereas conversations within the group require significantly more quiet and concentration. The possibility to work quietly and independently on writing tasks and the temporal and spatial flexibility of this approach (e.g., using placemats on a soft gym floor in the context of a game) leads to more individualized interferences in teaching and learning in the alternation between movement practices and intellectual practices.

“Yes, you might have to react a bit spontaneously. It might also be that the neighboring class is doing a unit on gymnastics and it’s a little quieter, and then you might be able to organize the lesson differently. However, from a planning standpoint, it was important to me to have the students write things down in a relatively open-ended and flexible way. In my opinion, the results were quite good, and the phases of discussion were kept as short as possible to summarize things again, either to take stock of where we were at that point or to sum up what was supposed to be the outcome of the lesson.” (ESP_06, teacher_f, 6th grade)

Teachers see the “difficulty” of efforts to put important processes and outcomes of reflection into writing as an additional challenge. Traditionally, knowledge imparted in school is publicly formalized for students by being written down. Writing-based techniques have a “specific, knowledge-consolidating performativity” (Proske, 2011, p. 7) that takes on an exclusive and simultaneously pragmatic performance character in PE.

In this context, written reflection can make it possible to overcome temporal and spatial boundaries, capture ephemeral phenomena, recall past events, and can be used to transition from movement practices to intellectual practices. While different types of writing tasks are an established part of classroom instruction, intellectual task formats are highly underdeveloped methodologically in PE. The social practice of reflection typically occurs in group or classroom discussion mode—with all the advantages and disadvantages that entails.

“They presented their results in the phases of discussion, but only in a very rudimentary way, that is, not in the form of oral reports or talks. A lot happened in the discussions when students were reflecting. I took some notes and made posters for the next class session. Sometimes I quoted students’ homework and also put the quotes in the posters on the board. But that wasn’t just to incorporate their results into the next lesson; it was also to save time to have more time for movement.” (ESP_05, teacher_m, 5th grade)

As techniques providing methodological support, representation and visualization are used to present discussion results and students’ reflections (in at least a “rudimentary way”). These not only make knowledge visible; they also serve explicitly in increasing the efficiency of the discussion phase. This time saving in turn offers more time for movement. The requirement of keeping intervals of intellectual practices short in temporal intensity and maintaining a low threshold for participation has an economizing effect on the interference with dominant movement practices. The methodological aids thus also serve in tightening and streamlining the overall structure of the lesson.

The “plenary discussion” is the most frequently chosen format for implementing a “reflective practice”. However, these conversational reserves represent a relatively disturbance-prone organizational form. Even though it is repeatedly argued from a neurobiological point of view that movement activities are crucial for concentrated learning, this overlapping of movement practices and intellectual practices in PE is often perceived as problematic.

“Yes, absolutely, on the one hand it’s a habit, as I said earlier. In my opinion, that’s the case one hundred percent. If you feed a class these kinds of occasions on a regular basis, then they’re much more willing to do it and they know precisely: ‘Okay, this will only take five minutes and then we can continue.’ But getting them to concentrate for a moment, managing to get a concentrated mode of discussion going during this activity is not so easy—you can see it to some extent in the videos, because of ‘just hold onto the ball for a minute’ or ‘please stop talking already.’” (ESP_04, teacher_m, 9th grade)

From this teacher’s point of view, a strategy of ritualizing communicative opportunities and “feeding” the students such practices on a regular basis seems to be a prerequisite for the success of conversation. At the same time, he also emphasizes a strategy of economization: Interruptions to the movement practices should be kept as short as possible, and even so, it remains questionable whether

meaningful discussion can take place at all.

Regarding the insertion of phases of reflection, the teacher’s expectation is evident that “a concentrated mode of discussion” will be difficult to achieve if there is a direct transition from discussion to the subsequent movement activities and if the discussion resembles a 5-min break. With the dual expectations inherent in “reflective practice”, the movement practices in PE classes—which teachers try to keep as high as possible—bring not only joy but also sorrow to the teachers concerned. Within the space of the gymnasium, not only habitual behavioral patterns and the “illusion of the field” (Schierz, 2013) but also object cultures are clearly oriented toward movement practices rather than intellectual practices stored in conversational reserves. From the teacher’s perspective, flexibility, a degree of openness, and some amount of improvised spontaneity are central resources for pragmatic and constructive interferences between practices.

“Learning” media: the imposition of written forms

“In the fourth session of the class, I distributed about four placemats on four gym mats. While the students were playing, they had to read what it said for themselves and then think about what it meant to them. For example, ‘Keeping it fair means ...’ or ‘A good referee means ...’ or ‘A good referee is ...’ or ‘When I’m competing against someone one-on-one, I see ...’ or ‘I hear ...’ And based on these notes, we then verbalized certain things that were important for our teaching project or reflected again at the end on points where, for instance, the idea of being a referee became important. I had them read that or what they saw or heard out loud again to simply direct their attention again toward certain things. I don’t think it’s possible for me to check and find out exactly who did or did not have a successful learning outcome, and I don’t even think I should. My only concern was that the students wrote down things that were interesting, that might not have come up in the same way in a discussion in the gymnasium, or that might not have been

verbalized at all. So, I consider this tool to be very valuable, and I would do it the same way again.” (ESP_06, teacher_f, 6th grade)

In this interview sequence, the teacher emphasizes a content-related dimension of interference: “points” at which “it became important” mark the transition from a movement practice to an intellectual practice, thus acting as a kind of hinge between practices. Depending on how the various topics are covered and how the teaching and learning content is structured dramaturgically in the lesson plan, movement practices and intellectual practices overlap to varying degrees. Here, the central form of intellectual practice consists in putting movement perceptions, observations, feelings, and thoughts into words and engaging with these verbalizations in written and oral form in movement practice. How the various topics are structured and what methodologies are used with them is both orchestrated and flexible, allowing the teacher to place more emphasis on key points or change the order of topics to structure the instructional practice around the significance of the subject matter at hand. In characterizing the interference, a parallel structure of intellectual and movement practices emerges as a “healthy mixture” from the teacher’s point of view. With the addition of the obligatory “having to” briefly reflect, and the compensating “being allowed” to go back to being active again immediately thereafter, the teacher assigns these practices a complementary character.

“Well, for example, by taking a game, the ‘Sanitätsspiel’ (paramedic game), and having them play it with the sick person having to get down on the mat and write something in order to be allowed back into the center as a healthy person to take part in the game again, it was actually a healthy mix between, ‘well, I have to think for a moment about something specific, and then I’m immediately free to get back in there.’ It was also open, so maybe some of them didn’t write anything down right at that moment, but just looked briefly to see what was there to read or what was there to work on. Over-

all, however, I have to say that the class responded to these occasions for writing things down very positively and did so willingly. I think it makes a lot of sense to use this kind of combination for this grade level, because they may not even notice that they are doing cognitive work. In one class session, they were supposed to write, ‘I win if ...’ or ‘I lose if ...,’ and use this to reflect or write down again, to record in writing after an active phase of competition, ‘Why did I lose this time, why did I win this time,’ and put that down in writing and ultimately also to be allowed to write down their emotions immediately. That was quite good, I think.” (ESP_06, teacher_f, 6th grade)

Through the interpenetration of movement moments and intellectual moments, which are manifested praxeologically in an engagement with objects in action, as well as with objects in speech and writing, a coherence emerges from the teacher’s point of view that is relevant for PE. As a constructive, almost “unnoticed” overlapping of intellectual and movement practices, the teacher advocates for a preferably short and non-binding task of reflection “at this grade level” through the use of “open” writing tasks, which can in turn be used as a catalyst for flexible conversation phases. Incorporating a lower-threshold, less conscious intellectual learning activity into a movement practice appears to be key to a “reflective practice” (Lüsebrink & Wolters, 2017). This restrained intellectual practice apparently provides this teacher with a sensible form of intellectual learning that maintains “the primacy of movement.” Another form of interference is evident in a ninth-grade class, whether the teacher seeks to incorporate intellectual practices more flexibly into the temporal structure of movement practices.

“Yes, and then it always depends on the gymnasium, but I think it can be good in some places if you don’t give everyone a text that was covered in class as a hand-out, because some of the handouts just end up on the ground, or somebody slips on one, or they get scattered around on the bench and crumpled up, but if you

instead enlarge the text and hang it up on the walls of the gym in different places so that they can engage with the texts there.” (ESP_04, teacher_m, 9th grade)

The “objects of knowledge” (Röhl, 2015) enter the gymnasium in a restrained, tamed manner, as it were. In the gymnasium, in contrast to the classroom, students have “little” written homework, and workbooks are brought along to class “in addition” to “maybe” write something down. In the subject culture of PE, intellectual practices have a distinctly supplemental character. The didactic preparation of these practices can also be described as experimental and essentially subordinate, which in turn determines the nature of the “student’s job” (Bredenstien, 2006). From a praxeological point of view, it is the cumbersomeness and disruptiveness of handouts and pens that favors their structurally loose incorporation into PE classes. Also, the “slipping,” “crumpling,” and “scattering” of the material points to the absence of a cultivated handling of objects of knowledge in this subject. Instead, these objects are exposed to the maximum intensity of physical activity and are experienced in a destructive way in the practical overlapping of intellectual and movement practices. Appropriate demonstration practices, such as displaying texts in the social order of the gymnasium, are nevertheless didactically rearranged to integrate theory into practice performatively: Complementary movement practices and intellectual practices are brought into closer overlap in spatial and material, temporal, as well as bodily terms. Theoretical work in PE is usually interpreted in a very application-oriented way according to the didactic principle of “reflective practice” so that intellectual practices and objects of knowledge are located primarily at the sites where movements are performed, actions are analyzed, and experiences are reflected upon. When students engage in practical work, the material must be presented in a different way than it usually is in the classroom: It must be enlarged and hung up on the walls for all to see. The material is obviously of little use on the sidelines of the gymnasium, and it can even be a nuisance given the lack of

an appropriate order for such learning implements in PE. Loose sheets of paper fly around unclaimed or lie scattered about on the floor, where they even pose a danger. The underdeveloped culture of writing leads, quasi-logically, to a kind of sloppiness in the handling of objects of knowledge in the gymnasium, and this in turn serves as an argument for keeping these practices to a minimum. Yet in the end, the effort invested in these learning approaches seems to pay off:

“Yes, you definitely have to look and see what’s available for what you are doing in class at that point in time, and you generally do that anyway, but sometimes when you don’t have much time to prepare it might just be easier to demonstrate something by doing it yourself or having a student who is particularly good at it or whatever demonstrate it rather than selecting a lot of material, enlarging it, and hanging it on the wall. However, on the other hand, I have to say, to really individualize the lessons and to be able to say, here are a variety of resources that you can utilize, I have found out for myself again how much it really pays off to prepare, and to prepare intensively.” (ESP_04, teacher_m, 9th grade)

Writing thus appears as a key moment in intellectual practices, and one that has been examined relatively little up to now in the didactic context of PE. What is innovative here is not the use of written materials by the teacher, who aims to make instructional content public by hanging relevant materials and instructions on the wall, but the written culture and language of the students. Contributions to the discussion must be kept short or even cut off due to the occasional rather loud noise from surrounding groups. Writing prompts, by contrast, facilitates an essential process of “silent” verbalization and analysis in an otherwise noisy, animated environment. This can form a basis for communication in focused discussions on the topic of PE in public reserves of knowledge. Intellectual and movement practices overlap to such an extent that they structurally interrupt, delay, and to some extent disrupt each other’s activities. At the same time, the interference makes it possible for stu-

dents to utilize either supplementary or distancing approaches to the material in working through the topics at hand.

Discussion

The current study examines the tension between movement activities and intellectual activities in PE from a praxeological perspective. It investigates the didactic principle of “reflective practice”, which is currently disrupting the incorporated traditional mode of PE in Germany (Serwe-Pandrick, 2013), and foregrounds didactic interferences between intellectual practices stored in intellectual reserves and movement practices stored in movement reserves. In a work that preceded the current “intellectual turn” in PE, Neumann (2007, p. 67) placed the two key principles of good PE—movement time and reflection time—in a precarious relationship of “competition.” Attempts to reconcile these competing norms have led to strategies of pragmatic economization in sports pedagogy, such as the “outsourcing” or “acceleration” of reflection practices, but also to an aggressive professional “upgrading” of this mode of educational work in schools (Neumann, 2007).

The findings point to a resistance to intellectual practices within the culture of PE that is evident on temporal, spatial, and media levels. The teachers’ statements reveal clear tendencies toward pragmatic applications as well as the functional flexibilization of intellectual activities to ensure that intellectual practices can be integrated into the mainstream of movement practices, keeping the threshold for participation as low as possible and minimizing disruption. This minimal-intensity strategy of interference design is particularly evident in teachers’ skepticism about the potential burden intellectual practices could place on students (for confirming evidence from the student perspective, see, e.g., Lyngstad, Bjerke, & Lagestad, 2020; Modell & Gerdin, 2022; Schierz & Serwe-Pandrick, 2018) and about making PE too intellectual and academic. It is also evident in the relatively restrained utilization of objects of knowledge. Although the data show a more comprehensive mode of intellectual practice

in conversation reserves, the teachers do not provide normative arguments for alternating between movement and intellectual learning practices at maximal intensity. They therefore cultivate a role as bearers of the culture of PE in which they deal with objects of knowledge in a rudimentary way (Röhl, 2015) and approach these kinds of subject didactic developments with caution.

As a case study, this investigation has a representative function. It is therefore important to point out a few key aspects in which the microanalysis presented here offers a deeper understanding of problems that are common to intellectualized concepts of PE.

The incorporation of intellectual practices into PE appears to pose a challenge across a range of countries and concepts, mainly due to the risk of losing a culturally coded notion of movement time that is constitutive to the identity of PE (e.g., Chen et al., 2018; Hapke, 2018; Poweleit, 2021). This study confirms the sovereignty of movement time as a normative imperative, even when this time is used for intellectual practices.

The approach taken here underscores that this challenge is not due simply to a conscious rejection of intellectual practices on the part of the teachers, but that it may be caused by a deeply rooted, incorporated subject culture and a resistance of everyday practices in the social order of PE. The fact that the teachers in our study who welcome innovation still adhere to traditional patterns of argumentation—despite explicit intentions to do otherwise—shows to what extent their thinking and actions are guided by a collective orientation that interprets PE as a practical school subject that complements or even compensates for intellectual learning (Schierz, 2013; Schierz & Serwe-Pandrick, 2018). The format of the present study as an examination of the culture of PE offers a valuable, more differentiated understanding of the precarious status quo of intellectual practices and their potential for didactic development in PE. At the same time, the methodological approach of examining teacher perspectives has been a relatively marginal one in the praxeological classroom research to date. While the analysis

of interview data enables us to reconstruct the actors' collective patterns of orientation toward teaching (Schiller, 2019), the present study does not contain a classic praxeological observation of teaching practices (Breidenstein, 2006; Röhl, 2016; Serwe-Pandrick et al., 2019; Wolff, 2017). Follow-up studies could therefore also take a videographic look at conversation reserves (e.g., of instructional forms, spatial arrangements, objects of knowledge, and body orders in phases of intellectual activities) with a focus on didactic interferences between intellectual practices and movement practices in PE (e.g., disruptive and supportive elements, distribution of available instructional time, references and transitions between overlapping practices, tasks, materials, and media used in connection with movement activities). Thus, within the PE research of subject culture, questions concerning practices of structuring objects of learning, practices of task processing, and practices of interactional organization could be investigated in a more differentiated way (Breidenstein & Tyagunova, 2020).

If teaching is unambiguously coded by the culture of the specific school subject, the implementation of revised structural frames and didactic innovations is always closely tied to teachers' professional development. Here, the subject culture that shapes the profession of PE appears to be strongly oriented toward a self-image of PE teachers as athletes or coaches rather than as educators, resulting in a strong focus on movement practices (Svendsen & Svendsen, 2016). The orientations that guide the practice of teaching and learning are thus already in place to a large extent even before teachers start their teacher education program. Sometimes these orientations are reinforced rather than reduced during the course of teacher education, often due to the highly specialized practice-oriented nature of PE teacher education courses (Larsson, Linnér, & Schenker, 2016; Miethling, 2013). Successful implementation of intellectual learning thus depends significantly on the design of PE teacher education programs. It is crucial that prospective teachers' orientations to their subject are disrupted in teacher education to encourage them to

engage with interferences between movement practices and intellectual practices professionally (e.g., in the planning, implementation, and evaluation of their PE classes). This will likely require prospective teachers to develop a certain resistance to the ritualized everyday culture of PE so that they are able to habitualize didactically desirable orientations, even when they act as in-service teachers, when it is up to them to incorporate these into their own, often pragmatically oriented practices of teaching and learning.

To meet these demands for PE teacher education, reflective developmental research must also address the question of what comes after knowledge (Kahlert, 2007). Academic disciplines that study PE teaching and learning in an application-oriented way should ideally translate their findings into functional practical and political recommendations. Developmental research in sport pedagogy is therefore also required to integrate studies on intellectually challenging methods, tasks, and materials into practical school contexts, to develop professional competencies, and to evaluate the learning outcomes of students in this process.

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cal standards. Informed consent was obtained from all individual participants included in the study.

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