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Published online: 21 Jan 2015.

To cite this article: Dean Barker, Mikael Quennerstedt & Claes Annerstedt (2015): Learning through group work in physical education: a symbolic interactionist approach, Sport, Education and Society, DOI: 10.1080/13573322.2014.962493

To link to this article: http://dx.doi.org/10.1080/13573322.2014.962493

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Learning through group work in physical education: a symbolic interactionist approach

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In line with contemporary constructivist pedagogies, students are frequently expected to learn through interaction in physical education (PE). There is a relatively sophisticated body of literature focusing on learning in groups, peer teaching, and cooperative learning. Current research has not, however, focused on how the body is implicated in interactional learning. This is surprising given that much learning in PE is expected to take place in the physical domain. The aim of this paper is to contribute to current theorizing by examining social interactions in PE practice. By drawing on symbolic interactionist theory, we put forward a framework for considering how inter-student interactions occur in a multimodal sense. Key ideas relate to (1) the sequential organization of interactions; (2) the ways in which semiotic resources in different fields are used to elaborate each other; (3) the importance of interpretation as a driver of interaction; (4) the creation of local environments in which participants attend to and work together within a shared world of perception; and (5) the influence of material environments on social interaction. The specific concepts employed are epistemic ecology, epistemic position, and learning trajectory. The paper includes observational data from an investigation of learning in Swedish PE to demonstrate the explanatory power and limitations of the theoretical tenets presented. The paper is concluded with practical implications of understanding group work in a multimodal manner.

**Keywords:** Group learning; Interaction; Multimodal; Epistemic ecology; Epistemic position; Learning trajectory

**Introduction**

Student interaction is a familiar feature of physical education (PE) lessons. In practically any school, groups of students can be found choreographing dance routines, engaging in ball sports, running relay races, and performing gymnastic skills with one another. Unlike in other school subjects where teachers might select pedagogic strategies that involve student interaction to teach skills such as reading, group work is often an implicit part of doing PE (Lafont, 2012).

As one might expect, there is a large corpus of literature dealing with group work in PE (see Ward & Lee, 2005) with further advances being made recently (Casey &...
This body of research has contributed to our understanding of group work in general and how students communicate verbally in and around group work specifically (cf. Barker, Quennerstedt, & Annerstedt, 2013). Somewhat surprising is that despite extant scholarship, the role of the body and how interactions in group work are enacted in a corporeal sense in PE practice has largely escaped attention. This omission is strange given that (1) much learning in PE is expected to take place in the physical domain (Quennerstedt, Öhman, & Öhman, 2011); and (2) the body as an object of research has garnered increasing interest in health-oriented PE research and in education literature generally (e.g. Evans, Davies, & Rich, 2009).

The aim of this paper is to contribute to current theorizing of student learning in group situations by examining social interactions in PE practice. The practical relevance of the paper stems from the ubiquity of group learning situations in PE and the prospect of practitioners using these situations to facilitate learning more effectively. By drawing on symbolic interactionist theory (Goodwin, 2013; Mead, 1934; Streeck, Goodwin, & LeBaron, 2011), we put forward a framework for considering how inter-student interactions occur in a multimodal sense (Goodwin, 2007). The paper is a theoretical exposition with observational data from Swedish PE lessons included to demonstrate the explanatory power and limitations of the theoretical tenets presented. The paper is concluded with the potential implications of understanding group work in a multimodal manner.

Group work and interacting students in PE: current approaches

Learning through interaction has been a pervasive but not particularly well-understood feature of PE scholarship and practice (Hennings, Wallhead, & Byra, 2010). Popular instructional models such as sport education (Siedentop, Hastie, & van der Mars, 2011) and cooperative learning (Casey & Dyson, 2012; Dyson, 2002; Goodyear et al., 2012) are, like other contemporary constructivist-inspired approaches, wedded to the notion that students can interact with one another to construct content knowledge and improve their interpersonal skills. The idea that students do not have to interact with a teacher directly and can co-construct meaning with their peers has obvious practical implications and the microdynamics of peer interaction in this process has until recently received little attention (Wallhead & O’Sullivan, 2005).

Research on inter-student interactions in PE practice is not completely absent and in the last 10 years a body of literature has started to develop. The work of Lafont and colleagues (Darnis-Paraboschi, Lafont, & Menaut, 2005; Ensergueix & Lafont, 2010; Lafont, Proeres, & Vallet, 2007) constitutes one of the most sustained attempts to understand interactions in PE. Drawing on the work of social psychologist Michel Gilly, and in particular his classification of different co-elaborative behaviors, Lafont and colleagues have examined conversations, interactive dynamics, and speaking turns occurring in PE settings. They have proposed that groups that engage in frequent discussions between sequences of play are likely to have higher participation and better strategic competence than groups that do not (Darnis-Paraboschi et al.,
that groups that work together over time develop conversations that are more elaborate and centered on game strategies (Lafont et al., 2007); that group interactions can be facilitated through training (Ensergueix & Lafont, 2010); and that confrontation seldom leads to better motor performance (Lafont, 2012). In a qualitative analysis of gymnastics-type lessons, Lafont and Chaze-Capmartin (cited in Lafont, 2012) proposed that organization of situations for co-constructive activity leads students to engage in more creative activities (but also activities with higher chances of failure).

Amade-Escot’s (2006) research using a didactique research framework has also proven fruitful, largely because it provides a way of focusing on teaching/learning processes in situ. Wallhead and O’Sullivan (2007) have employed a didactique methodology to examine peer teaching in a sport education unit. They concluded that the effectiveness of peer teaching to help students reach learning objectives was limited by the peer-teachers’ ability to demonstrate content appropriately, identify critical components of the content, and provide relevant feedback cues in relation to those objectives. In a similar study, Hennings et al. (2010) used a didactique methodology to examine the teaching and learning taking place between undergraduate students during a rock climbing unit. The climbing episodes suggested that peer-assisted learning works well when the content is relatively simple but less well with complex material. Complementing these considerations, our own work (Barker et al., 2013) suggests that peer-learners, or novices, have a key role to play and that in order to learn in groups, all students must engage in some kind of shared communication and extend this agreement. Consensus is often reached within frames set either explicitly or implicitly by a teacher so the teacher has an important role to play whether they are directly present or not. We have proposed that inter-student agreement is an important element in the construction of knowledge in group work and that learning sequences can be examined for instances of consensus reaching.

Even though embodied aspects of learning in PE have been prominent in the last decades, not least through the work of John Evans and colleagues (2009) and the suggested use of the corporeal device, in the group work literature, these aspects remain largely unchartered. Absent in the current literature on group work—including our own—is accordingly a systematic consideration of how students’ bodies are implicated in interactions and the learning that takes place through them. Indeed, most research provides only glimpses of how bodies are present in discussions of how successful learning in group situations is enacted.

We are inclined to see this as at least partly the result of a different scale of ‘magnification’ concerning research focus. In relation to the literature on the body in PE we would argue that in line with Hodkinson, Biesta, and James (2007), our contribution is a matter of scale or as ‘zooming in’ more closely similar to the zoom function on ‘Google maps.’
UK or even, if the scale was small enough, in Europe. Each time the subject is the same, but what we can see on the map, and indeed what aspects the map can illustrate about items and the relationships between them, is very different. (p. 418)

We contend that while both group work and embodied aspects of learning in different movement cultures have been in focus in PE research, scholars have looked at these issues from a ‘zoomed out’ position and have asked questions about, for example, communities of practice (Kirk & Kinchin, 2003) or how the body is classed and gendered in PE (Azzarito & Solmon, 2006). However, it is also useful to know about how students embody ‘knowledgeable’ positions within groups and how they use their bodies to ‘teach’ other students within different movement cultures at a microlevel. In this way we ‘zoom in’ quite close and see the fine-grained details of the movement culture that are visible on the ‘map.’ To address these kinds of issues, a consideration of symbolic interactionist theory is useful.

**Multimodal interactions and learning**

Human interaction has interested theorists in disciplines ranging from anthropology to social psychology. One tradition often connected to studies of interaction is symbolic interactionism with its roots in pragmatism. Following the works of G. H. Mead (1934), learning is seen to occur through social interaction. Indeed, the meaning of an event is seen to be determined by our reactions to it.

While the verbal nature of interaction has interested scholars in different contexts including PE, awareness of the multimodal nature of actions—or the way in which actions are constructed through the simultaneous use of multiple semiotic resources—has only recently developed in ethnographic studies of interaction (Goodwin, 2000; Hutchins & Nomura, 2011). Investigators have noted that interacting individuals seldom just talk—they gesture, they adjust their posture and stance, and they relate to material objects around them (Goodwin, 2006; Goodwin, 2007). In this section, we will consider research building on symbolic interactionism that focuses on the multimodal nature of interactions. Our intention is to highlight some key ideas in current symbolic interactionist research and begin to develop a terminology on which we will draw in the following section. The specific ideas relate to: (1) actions and intent; (2) the serial nature of interactions; (3) the mutual organization of talk and gesture; (4) the importance of interpretation; (5) embodied participation frameworks; and (6) the process by which interactions are embedded within a social and material world. These propositions are not conceptually discrete but rather interrelated.

A central principle is that in any interactive situation, participants can and do make use of different kinds of semiotic resources to actively build joint action. Participants can for example, talk, gesture, direct, or avert gaze; even a nose snort can have significant meaning when performed in a specific context with a particular timing. Our ability to actively utilize resources with social meaning has led theorists to refer to actions as ‘moves’ (Streeck et al., 2011), a custom we will also adopt. At the same time, there are serious limitations to trying to interpret moves as straightforward
signs of internal intentions. Like Hutchins and Nomura (2011), we see the analytic task to identify the consequences that particular moves have for the development of a particular interaction rather than to deduce individuals’ particular states of mind or their intentions.

A second and related idea is that actions are built on preceding actions and that interactions are therefore sequentially organized. As individuals act they simultaneously present possibilities for their own and others’ next actions. Goodwin (2000) notes that in the course of an interactive sequence, different semiotic fields can be brought into play. Some fields might be added while others lose their immediate relevance. A person may for example continue to wave (gestural field) for some time after they have said goodbye (verbal field). In this respect, fields have different temporal organizations. Further, as long as the body remains publically visible, it can continue to produce meaning and action in different situations. The implication is that interactions are not only sequentially organized but are in a continuous process of change (Goodwin, 2000).

Third, fields of semiotic resources are often partial or incomplete and moves in different fields are deployed in ways that elaborate each other (Enfield, 2011). Talk and gesture, for example, are typically mutually organized where the producer’s facial expressions, corporeal actions, and use of material objects around them help the co-actor to interpret meaning in that particular context. Asking someone to ‘Look over there’ is all but incomprehensible unless the verbal utterance is accompanied with some kind of pointing movement, possibly with the eyes, hands, or chin. Two additional points can be made. The first is that we rarely have to consciously couple talk and gesture. Second, because individuals are accustomed to combining semiotic resources, they sometimes continue to make use of signs even when the fields cannot be made public. An example of this is when individuals gesture while talking on the phone.

From a multimodal view of interaction, interpretation takes a prime position (Goodwin, 2000). Although sign production has traditionally been seen as the driver of interaction (i.e. one person sends a message for another person to receive), interpretation is seen to be of central importance because the production of signs occurs with interpretation in mind. If a person is to be understood in a certain way, she/he has to produce a move that can be interpreted ‘correctly.’ Enfield (2011) proposes that communication is not so much about transmission as it is about ‘mak[ing] public the means for another person to build an adequate understanding in response’ (p. 60).

The organization of group activities has also been a focus of interaction research. Goodwin (2007) proposes the notion of ‘embodied participation frameworks’ (p. 53) to capture the process by which group members create local environments in which participants treat each other as attending to and working together within a shared world of perception and action. Much like Goffman’s ecological huddle (cf. Streeck et al., 2011), Goodwin (2007) suggests that shared focus of visual and cognitive attention is ‘constituted through the mutual alignment of the participants’ bodies [which] indexically grounds the talk and embodied action occurring within it’ (p. 57).
Interacting individuals enter into a coordinated activity where the basis for interaction is agreed upon and listeners are prepared to inhabit a conceptual world constructed in response to what the speaker has already said (Hutchins & Nomura, 2011).

Finally, multimodal approaches acknowledge that action occurs in social and material environments (Goodwin, 2013; Keevallik, 2010). Moves are social in the sense that their meaning must be shared for them to work as moves. Moves are also frequently indexical in that they relate to specific things and cultures. If someone says ‘Can you hold this for a moment?’ while holding out their bag, ‘this’ obviously indexes the bag. What multimodal approaches draw attention to is the frequency with which material settings are implicated in interactions and the importance of artifacts in shaping the course of interactions.

**Epistemic ecologies, epistemic positions and trajectories of learning**

Even if our understanding of interaction is guided by the above principles, it is worth considering how learning in or through interaction can be explored in more detail when ‘zooming in’ on the map. It should be apparent that learning from this perspective will not refer to the acquisition of concepts and other cognitive ‘stuff.’ Instead, following Melander’s (2012, 2013) use of Goodwin, we are exploring learning as interactional accomplishments in terms of: epistemic ecologies, epistemic positions, and trajectories of learning.

Consistent with embodied participation frameworks and the symbolic interactionist idea of social interaction, Goodwin (2010) has introduced the notion of epistemic ecologies. The key difference between a participation framework and an epistemic ecology is the significance of knowledge. According to Goodwin (2010), epistemic ecologies are defined by how knowledge is distributed within a group as well as the dynamic relationships between participants that arise as a result of that distribution. Within such ecologies, actions are organized in ways that help to create and sustain socially organized ways of knowing, seeing, and acting in the world.

Within epistemic ecologies, participants take on different epistemic positions of knowing and unknowing (Goodwin, 1981). Epistemic positions are not grounded within the private mental life of individuals but in the public organization of action. Individuals display moves that situate them as knowers or unknowers and their positions are granted by others in the group. In a gymnastics lesson, a student might mention her prior experience, perform a cartwheel, or attempt to show another student how to perform a skill in terms of an epistemic position of ‘knower.’ Importantly: (1) these moves have different ‘currency’ and therefore different consequences for the position that the girl can assume; (2) epistemic positions are relative rather than absolute—demonstrating a cartwheel in a class full of elite gymnasts probably will not guarantee a knower position; and (3) positions are dynamic and can change. This third point is crucial because development over time is inherent in learning processes (Melander, 2012).

From a symbolic interactionist perspective, advancing from an unknowing position to a knowing one in a certain context is essentially what learning is about, a point
expressed by the notion of a learning trajectory. Melander (2012) has traced learning trajectories of pupils suggesting that progress can be captured empirically. Drawing on participatory approaches, Goodwin (2013) proposes that ‘through the progressive development of, and apprenticeship within, diverse epistemic ecologies, communities invest their members with the resources required to understand each other in just the ways that make possible the accomplishment of ongoing, situated action’ (p. 8). He adds that each setting must be inhabited by competent members who have ‘mastered the culturally specific practices required to perform the activities that animate the lifeworld of a particular community’ (p. 8). This is an interesting idea since it encourages us to think about the practices that animate PE lessons. It is also an idea to which we shall return in later.

Data production procedures

The empirical material used as illustration in the paper comes from a study of learning in Swedish PE in eight different schools at secondary and upper secondary level. The investigation involved video-recorded observations, semi-structured interviews with students as well as the teacher, and textual analysis of local syllabi at each of the schools (see Quennerstedt et al., 2014, for a detailed account of the methodological approach). Seven researchers working in different constellations used several theoretical perspectives to analyse aspects of the data. Due to the nature and focus of the analysis conducted for this paper, along with the aim of the paper (to contribute to current theorizing by putting forward a framework for considering inter-student interactions), only observation data from one school are used.

The three sequences used for the illustration occurred during a lesson in a lower secondary school (pupils aged 14–15). The lesson was selected for two reasons. In various ways, it represents what Kirk (2010) refers to as a PE-as-sport-technique movement culture, which is recognizable both in Sweden and other countries (Annerstedt, 2008). The movement culture is characterized by the learning of certain sport specific techniques in relation to specific sports. In this case, the teacher acted as an instructor and the students were supposed to learn the parts of a motor skill and put them together in an imagined whole. During the process, the students were expected to work independently for extended bouts as the teacher circulated and provided help to other groups. This provided ample opportunity to observe student interactions.

During the lesson, the students participated in two separate activities illustrative of the movement culture. One of them was a golf activity, which involved striking practices golf balls from a rubber tee with a number 7 golfing iron. The teacher introduced the activity with a three-minute demonstration in which he articulated what he believed were the main elements to concentrate on. These included: having a grip in which the fingers are interlocked, putting the ball on the rubber tee, standing in a position so that the ball is equidistant to each foot with knees slightly bent, placing the club behind the ball and drawing back as far as it feels comfortable, and trying to keep your eyes on the ball the whole time. The demonstration ended with the teacher hitting the ball nicely through the air, providing an example of
knowledgeable action. After the teacher completed his demonstration, he asked the students to organize themselves into groups of two, three, or four people. Each group collected one club and some balls, found a space along the side of the school’s football field, and began to hit their balls out on to the football field.

The sequences chosen for analysis were transcribed verbatim. The original language is Swedish and English translations were made with a view to staying as close as possible to the original meaning, rather than the literal translation. To illustrate both the verbal and the corporeal moves of the participants, we have included frames taken from the video footage.  

**Interactive sequences**

The aim of this section is to illustrate what the outlined theory looks like in practice. Like most theoretical frameworks, the symbolic interactionist perspective and the specific concepts delineated above for doing microanalysis of PE practice provide a way of describing the empirical material that represents what we have referred to as the scale of the exploration. In this way, the theory draws our attention to certain features on ‘the map,’ in this case, of group work within a certain movement culture in PE.

**Sequence one**

The group comprises four girls. They organize themselves so that the three nonhitters stand directly behind the hitter, ostensibly for safety reasons as they try to stay away from the swinging club (see Figure 1). The formation makes it difficult for them to share a mutual focus on the central artifacts of the event (the golf club and ball). The hitter takes two swings without hitting the ball, establishing a novice position. This elicits laughter from the three nonhitting girls who orient themselves towards one another in terms of stance and gaze direction. The teacher approaches
the group, watches for a short time and after the fifth unsuccessful swing, forms a ‘huddle’ with the hitter and provides some advice. Standing directly behind teacher and hitter, the other three girls do not listen to what is being said and are still not part of the interaction and thus the epistemic ecology. After hitting the ball on the ninth attempt, the hitter appears relieved to be able to pass the club to the next girl who takes it slowly and without obvious signs of enthusiasm. The second hitter misses on her first attempt and the two nonhitters giggle (the first hitter stands silently slightly apart from the other two nonhitters). The second hitter tops the ball with her second attempt and it runs off across the field. The girl is not interested in the course of the ball. Before it stops rolling, she passes the club to the third hitter and begins to tidy her hair. The third hitter is successful on her first attempt. She glances quickly at the others, picks up another ball and places it on the tee. Her move goes against the established pattern of interaction but she hits the second ball more cleanly than the first and lets out a small exclamation of satisfaction. Still, she has the club in her hands for only 22 seconds before she passes it on. The final girl has difficulties balancing the ball on the tee but eventually takes a swing and misses. Unlike the previous three hitters who remained focused on the task, she turns around and says something to the others (inaudible on the video recording). She connects with the ball on her second attempt and it traces a flat arc through the air. The other three acknowledge her success with verbal exclamations and she does a little dance-like movement and wiggles her hips as she passes the club back to the first hitter. The girls begin their second round of turns. The first hitter (S3 below) slices her first shot but connects cleanly with the second. She is also rewarded by cheers from the nonhitters. The second hitter (S1 below) approaches for her second turn; however, instead of keeping her back to the group members, she takes some steps toward them and asks for advice (Figure 2). This move appears to signal a shift in the ecology and

![Figure 2.](image)

S1: So you should bend your legs a little or what?
S?: Yeah, you should bend the legs.
S3: I’ll show you [Walks up to hitter].
a knower–unknower relationship develops. It is noteworthy that S3 assumes the knower position since she had missed the ball nine times on her first turn. Still, with her second turn, she demonstrated that she could hit the ball and in this particular ecology, her demonstration warranted a degree of expertness. She speaks with knower authority when she helps S1 and actually takes S1’s hands and puts them in the ‘right’ position (Figure 3). S1 tries to hit the ball but misses. She starts laughing. She tries again and succeeds in hitting the ball a short distance.

Sequence two

The three girls in this sequence have a different spatial organization to the girls in the first sequence reflecting quite a different epistemic ecology. Again, the hitter (S2 in Figure 4) has the position of novice; but in contrast to the first group, another member of the group (S1) is eager to assist. The third member of the group (S3) is initially against helping and wants the hitter to make an attempt without help. S1 insists on helping and comments on the way the hitter is holding the club. S1 provides a quick demonstration of how to hold the club by taking the club from the hitter and holding it directly in front of her (Figure 4).

When the hitter draws the club back, she is still not gripping it correctly according to the two other girls, and this time the third girl intervenes. The third girl does not simply demonstrate but takes the hitter’s hands and puts them in the ‘right’ position on the club (Figure 5). While she is doing this, she says very little, instead...
manipulating the hitter’s hands on the club. The move results in the hands being in the right position but also helps to explain why the hitter seems too relaxed to take a golf swing. S3 steps back to her original position away from the hitter but when she sees that the hitter’s hands have changed, she immediately takes a step toward her, holding her hands out in front of her for the hitter to see (Figure 6). The hitter tells

Figure 4.
S1: [centre, foreground] Shall I show you? This is how you do.
S3: [right] Let her try herself.
S2: [centre, background] I’ll try.
S1: No, but I was just showing how to hold.
S2: OK.

Figure 5.
S3: Mmm. No, like this [shows her while taking her hands and moving them into the right grip]
the other two that she would like to hold the club ‘like this.’ The other two disagree and all three girls begin their verbal utterances with ‘No.’ S3, however, continues her move and couples it with more verbal instructions. The hitter then takes a swing and misses. On her second attempt, she hits the ball a short distance on to the football field. She raises her right arm and smiles broadly. The other two girls do not react; S1 keeps her hands on her hips (Figure 7) and neither girl comments.
Sequence three

The third example concerns a group of three boys. The knowledge structure has been largely determined prior to this sequence with one student (S2) demonstrating that he can hit the ball some distance in a relatively consistent manner (Figure 8). The present hitter (S1) adopts the novice epistemic position, saying to S2 ‘You will have to teach me.’ He follows this with a question about how to hold the club. As in the other groups, the students spend some time looking at the grip. In contrast to the first group, where the discussion began relatively late and in contrast to the second group where the expert bent down and focused exclusively on the novice hitter’s hands, the two boys begin by talking and are side by side as the knower explains and demonstrates to the hitter how to put his hands in the right place.

![Figure 8](image-url)

S1: [left, background]: You will have to teach me. You kept your grip a bit more down, didn’t you?  
S2: [left, foreground]: Yes, like this! You put your hand here. First, your left and then your right. You put that finger right here! And then this one here. And think about the thumb.  
S1: Ok wait a little, like this?  
S2: Ok, like this. The thumb on top and shut here. And then forward here. Put in in there!

When S1 and S2 agree that the hands are in the right position, S2 steps away. The hitter does not have a ball ready but does not want to remove his hands from the club now that they are in the correct position (Figure 9). The two nonhitters collect balls and one sets a ball on the tee. The hitter does not hit the ball immediately but instead takes a practice swing. The swing elicits more instruction from the other group members and S3 tells the hitter to bend his legs and, standing in front of him, shows how he should be standing. At this point, the teacher’s attention is also piqued and he suggests two improvements (bent legs and club head on the tee mat). The hitter uses the opportunity to ask the teacher about the club and remarks that he is used to a left-handed club. Neither the teacher nor the other group members can provide a left-handed club and the hitter turns his attention back to the task.
He asks one more question and then moves to the ball. He misses and almost comically assures the other two that he was just practicing. He misses the ball again and again, claims to be taking a practice shot. The explanation is not accepted by S2 who counters by saying that the hitter is trying to hit the ball too hard. There is a lack of agreement here and the hitter does not concede that he is using too much power. This reaction is significant in that it disrupts the knowledge positions that have been established by the golfing activity. S1 changes the topic of conversation back to the club and how he would like to be using a left-handed club.

Discussion

Current research has provided insights into group work in PE (Casey & Dyson, 2012; Ensergueix & Lafont, 2010). The three examples taken from a microanalysis of a movement culture above provide additional points for discussion. First, we would like to draw attention to the nature of the groups’ epistemic ecologies and the epistemic positions within them. The members in each of the groups enacted differing levels of knowledge but largely in the same ways across the groups. Individuals adopted novice positions by: asking questions, orienting themselves to the other group members, and waiting for others to act, keeping the activity’s main artifact (the golf
club) in the sight of the other members—allowing themselves to be touched or have others move close to them. Individuals adopted expert positions by reacting to the novice’s actions, giving instructions and commands, taking the artifact from the novice, and at times, manipulating the novice’s body in line with the movement culture. In both the case of novice and expert, the construction of positions can be seen not only in verbal interaction (cf. Darnis-Paraboschi et al., 2005; Lafont et al., 2007) but also in the ‘corporeal moves’ of the participants. Recognition of these physical dimensions of group work may be especially helpful for teachers as they consider how to frame and re-frame situations of reciprocal or peer-assisted learning. Decisions regarding group size, spatial positioning, the nature and timing of demonstration(s), and whether or not to intervene, for example, might be made partly on the basis of the moves that students display, with a view to providing students with adequate opportunities to create effective learning interactions.

The teacher’s initial demonstration was consistent with a reciprocal style of teaching (Mosston & Ashworth, 2002), even if his intervention in the work of some of the groups was not. The demonstration was important in the social production of the epistemic ecologies because it provided students with symbolic resources to build interactions in the context of the movement culture of the golfing activity. Epistemic positions were distributed according to how well a student could deploy the resources provided by the teacher (such as gripping the club with linked fingers, standing with knees slightly bent, drawing the club back a comfortable distance, keeping eyes on the ball) rather than formally designated as in other models where teaching roles are assigned (Kirk & Kinchin, 2003; Kirk & MacPhail, 2002). Significantly, in each of the examples, the student with the golf club was called upon to perform all of his or her knowledge simultaneously while the other members could act collectively. The hitters’ bodies became the focus of the group members’ attention and therefore a central site of meaning production. This may explain why the hitters tended to become the novices in the three examples, with the nonhitters attempting to reproduce knowledge through the hitters’ bodies. The teacher’s demonstration was not the only source of expertise though and students could also call on and display prior experience from beyond the classroom to assume knower positions. This occurred in the third example, where one boy demonstrated golfing capability and was granted an expert position by his peers. In contrast, the girls in the first sequence had minimal golfing experience and none were initially prepared to assume an expert position. In this case, one might wonder whether (1) it would have been beneficial to assign students teaching and learning roles (see Hennings et al., 2010) and (2) how the teacher might have supported the students in teaching roles.

From the symbolic interactionist perspective used in this paper, learning trajectories involve moving from an unknowing position to a knowing one where a knowing position is seen as an interactional achievement (Goodwin, 2013). The successful golf shot, or one that approximated the teacher’s demonstration, was the most obvious way for students to stake a claim on a knower position. Such shots were frequently acknowledged by the other members of the group. Hitters, however, also appeared to mark their attempts, including hits and misses, with other gestural and
verbal moves as a way of attaching meaning to their actions and thus their positions. In the first two examples, instances of celebration were used to ascribe ‘success’ to the performance. Only in the first case was a position of knower granted by the others in the group—the reaction of the three observing girls conferring expertise within the group. In the second example, the hitter’s air punch was not enough to elicit the granting of success from the reacting group members and it therefore did not signal a shift toward a knower position. The hitter in the third example denoted his unsuccessful swings with verbal moves. In contrast to the previous examples, he appeared more concerned to prevent his golfing actions placing him in an unknower position. As illustrated, this did not appear to have the desired effect and one of his peers rejected his claim that he was not actually trying to hit the ball.

Goodwin (2013) suggests that experts are individuals who have ‘mastered the culturally specific practices required to perform the activities that animate the lifeworld of a particular community’ (p. 8), in our case illustrated by a specific movement culture in PE. In the illustration, none of the students had mastered the culturally specific practices of golfing. On the one hand, this did not prevent expert-novice relationships from emerging; relationships were relative and trajectories were still apparent. But as in Wallhead and O’Sullivan’s (2007) examination of peer teaching, the absence of experts resulted in limited potential trajectories of learning, at least from a golfing perspective. The possibility of the hitters learning anything about the golf shot—such as when it might be used or how it is different to other kinds of shots—was dependent on ‘expert’ peers. Further, and perhaps more importantly, the culturally specific practice of golfing in which the shot takes place had for all intents and purposes been absent from the outset of the lesson. The students were practicing the shot with a substitute golf ball on the edge of a soccer field without a target. In line with other research in this special issue (Ward & Quennerstedt, 2015), the movement culture being approximated was technique-oriented. This may explain why the hitter in the second sequence punched her fist in the air after her shot rolled slowly over the grass. On a golf course such a shot would not be grounds for celebration. In the PE class, however, hitting the ball and an accompanying show of satisfaction may be understood as a symbolic act of knowing the PE movement culture in terms of PE-as-sport-technique (Kirk, 2010).

Conclusion

The aim of this paper was to contribute to current theorizing of student learning in group situations. By drawing on symbolic interactionist theory, we have put forward a framework for considering how inter-student interactions occur in a multimodal sense. Through a fine-grained microanalysis of group work in PE practice, we have shown several features of interactions to which such an analysis might draw attention. As well as providing new terms for talking and thinking about group work in PE, a symbolic interactionist approach and the notions of epistemic ecologies, epistemic positions, and learning trajectories have important implications for practitioners.
First, such an approach encourages teachers to consider the role they play in constructing ecologies in their classrooms. We would suggest that an important ‘first step’ for practitioners is reflecting on the kind of movement cultures that are being (re)produced in their lessons. A technique-oriented culture perhaps unsurprisingly appears to demand different kinds of interactions to a sport-oriented culture of the kind aimed at in the sport education model (Siedentop et al., 2011), for example. Where a focus on techniques encourages students to concentrate on individuals and the acquisition of skills during group work, a movement culture based on sport practices fosters a collective approach, where practices are central and learning is viewed somewhat more broadly in terms of participation. In either case, it seems particularly necessary for practitioners to (1) reflect on what it means to know and do and (2) consider the composition of groups carefully. It would make little sense, for example, to expect students to learn to participate in golfing culture and the myriad norms, terms, and rules of etiquette that it entails if groups do not contain people with golf experience. From this perspective at least, group work should be used with a degree of caution.

Second, the analysis provided here can begin to furnish teachers with a heightened sensitivity to what is taking place during group work. By thinking in terms of positions and by being able to observe individuals in terms of the corporeal moves they are making, teachers can acquire a more nuanced appreciation of when to offer assistance and indeed, what kind of assistance might be required. A group may need technical input but they might also need help to reorganize themselves spatially or they might need assistance in how to get instructions interpreted in the way that they want them to be interpreted. Our impression is that many teachers already are sensitive to the nature of student interactions and do intervene when they believe that it is necessary. Our claim is not that this approach provides teachers with sensitivity but rather that it has the potential to refine it.

Third, and related to the first two points, the perspective described in this paper encourages teachers to consider learning in more detail. If we take knowing to be a result of the public organization of action, then the learning trajectories of individuals, and of course, their performances in formal and informal assessment tasks, will be crucially affected by those around them. This is an important point given that groups are often formed in an impromptu and ad hoc manner (Casey & Dyson, 2012). In our view, more considered grouping strategies that go beyond ‘mixing people up,’ ‘keeping friends together,’ or even ‘ensuring groups have at least one expert’ are necessary. This is not to suggest that one grouping strategy might prove superior to all others in terms of facilitating learning. Rather, it is to suggest that teachers should be mindful of the affects that group composition can have on learning and use different strategies according to the unique demands of the situation. A related point that needs further consideration is this: If knowing is an interactional achievement, then is it possible to decouple working harmoniously in an affective sense from skilled performance in a technical sense?

Finally, we recognize that the approach provides relatively little theoretical purchase on is the structural and reproductive aspects of embodied learning. To
return to our scale analogy, the local focus of the symbolic interactionist approach does not provide a good sense of how broader social structures such as gender or class influence classroom practices (cf. Evans et al., 2009). To our minds, different scales are useful for different questions. As demonstrated, a fine-grained analysis of group work within the movement cultures of PE can provide valuable insights into a common feature of lessons that is in need of further consideration.

**Funding**

This work was supported by the Swedish Research Council [grant number 2010-5182].

**Note**

1. The research project followed the ethical guidelines outlined by Swedish law as well as the Swedish Research Council. The students in the pictures gave consent for the pictures to be used for research purposes (see Quennerstedt et al., 2014 for further ethical considerations in the project).

**References**


