Editorial: The interplay of interactional space and multimodal instructions in teaching contexts

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KEYWORDS

multimodal instruction, interactional space, conversation analysis (CA), embodied learning, instructional practices

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Editorial on the Research Topic
The interplay of interactional space and multimodal instructions in teaching contexts

Instructions represent a central practice in educational settings and constitute a distinct form of social action oriented toward the transfer and joint construction of knowledge and the facilitation of learning. Following Lindwall et al. (2015), instructions can be understood as communicative moves that not only convey information but also project subsequent actions on the part of the recipient. They are frequently formatted as requests, orders, or directives, and they can involve either an invitation to carry out an action autonomously or to jointly accomplish a task (Simone and Galatolo, 2023). While instructions often aim at guiding recipients through complex, multi-step procedures (Ehmer et al., 2021; Mushin et al., 2019), they are not limited to the spoken modality: written forms such as manuals, recipes, assignment prompts, and blueprints equally belong to the repertoire of instructional practices.

This Research Topic brings together studies that illuminate the situated and multimodal character of instructions and the ways in which interactional space is configured to accomplish them. From a conversation-analytic perspective, instructions can be seen as embedded in sequential structures of action and response, formatted so that they display an orientation to mutual intelligibility, shared attention, and the participants' relative epistemic statuses (Deppermann, 2018; De Stefani, 2018). Recent work has underscored to what extent instructions are recipient-designed: their linguistic formatting and embodied realization are sensitive to instruction recipients' prior knowledge, displayed competences, and emerging understandings (Olbertz-Siitonen and Piirainen-Marsh, 2023).

Importantly, instructions do not prescribe unambiguous courses of action in advance; rather, they are contingently negotiated and progressively adapted with regard to the participants' analyses of the material, social, and spatial circumstances in which they are embedded (Lindwall et al., 2015). This contingency manifests itself in the need to segment complex activities into smaller, locally manageable units (Lindwall and Lymer, 2023). This segmentation process is itself an interactional accomplishment, shaped by the novice's embodied displays of understanding or difficulty and by the instructor's continuous

monitoring and assessment (Lindwall and Mondada, 2024). Indeed, the mutual orientation of instructors and learners to the progressivity of instructed action entails that they co-construct each relevant "next step". Instructed activities often unfold sequentially as recognizable patterns, such as three-part IRE (Initiation–Response–Evaluation) sequences (Mehan, 1979). However, as Lynch and Lindwall (2023) point out, the relation between instructions and the actions that follow them is not a mechanical chain. Rather, participants integrate instructions within their own situated interpretations and improvisations. Consequently, the uncertainties and discrepancies between prescribed procedures and actual performances become analytically productive sites for understanding how practical action is organized (Lynch and Lindwall, 2023).

Alongside these temporal and sequential dimensions, the spatial organization of interaction has gained increasing attention in multimodal CA in recent years (Mondada, 2009, 2013). Research on interactional space emphasizes how participants dynamically constitute, maintain, and reconfigure spatial arrangements through their finely coordinated use of bodies, gaze, and material artifacts (Goodwin and Goodwin, 2004). This perspective highlights that space is neither a neutral, pre-existing container nor merely a backdrop for interaction. Rather, interaction and space are reflexively related: spatial arrangements both enable and constrain particular forms of participation while at the same time being shaped by the unfolding of activities (Hausendorf and Schmitt, 2018).

Indeed, in instructional contexts, the affordances of space play a pivotal role. Teachers and trainers, for instance, routinely draw on spatial resources to signal transitions between topics, to create or withdraw opportunities for participation, and to scaffold learners' engagement with linguistic and material objects (Schmitt and Putzier, 2017; Jacknick, 2021). It has also been shown that the positioning and movement of bodies in their physical environment can demarcate phases of instruction, orient joint attention, or create "shared perceptual spaces" (Hausendorf, 2010), that is, "instructed vision" (Goodwin, 1996). Participants flexibly negotiate proximity and distance, organize their mutual visibility as well as visibility of relevant objects, and establish shared foci of attention. This dynamic spatial organization is integral to the process of demonstrating, explaining, correcting, and assessing instructed action (cf. e.g., Markee, 2015; Putzier, 2016; Jacknick, 2021; Kunitz, 2021).

The multimodal character of instructional practices thus involves a rich repertoire of communicative resources that are orchestrated to produce recognizable instructional trajectories and render next actions relevant and accountable. Moreover, the simultaneity between instruction and instructed action demands that participants continuously coordinate their perspectives on the evolving task, attending both to talk and the embodied progressivity of action (Simone and Galatolo, 2023).

This Research Topic aims to advance our understanding of the interplay between multimodal instructions and interactional space across diverse educational contexts. Two contributions investigate dance rehearsals: Smart and Szczepek Reed show how instructors and dancers multimodally co-construct a "Teaching Space", adapting physical spatial boundaries and transitioning between participatory roles so that instructing and instructed

action both shape and are shaped by the interactional and physical space. Krug's contribution also studies the highly sensitive moments of transitions between activities in instructions during dance rehearsals. He analyses participants' achievement of smooth shifts between different instructional phases by managing finely coordinated multiple activities at the same time, using verbal, spatial and bodily resource. In the next article, by Wilton, the instructed action at the heart of the study is the crafting of prehistoric-style objects, with a desire to collaboratively reconstruct skills and knowledge of a past human era. The study focuses on the orientation, configuration and establishment of boundaries, both physical and conceptual, during the interactional process of instruction. In Lazovic's article, interactional spatial arrangements are also not merely physical. Here, they are partly set in virtual reality. Lazovic's research shows how participants in a dyadic language learning setting make efforts to create and maintain mutual perspective alignment to collaboratively work on interactional space during and for instructed actions. The final study, by Dix, also involves a machine, but here its role is that of a participant in the instructed action. In her study of a kitchen robot demonstration, the author analyses an "instruction triangle" of human instructor, machine instructor and learners. She shows how the human instructor creates and builds on physical and interactional spatial configurations to construct her own position as intermediary between the machine and the learners. By bringing together empirical studies grounded in conversation analysis and multimodal interaction analysis, this Research Topic offers insights into the situated practices through which instructions are produced, negotiated, and made consequential. At the same time, it contributes to broader theoretical debates about the organization of social action, the embodied nature of knowledge transmission, and the reflexive constitution of interactional space.

Author contributions

MM: Writing – original draft, Writing – review & editing. CK-F: Writing – original draft, Writing – review & editing. CS: Writing – review & editing.

Conflict of interest

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