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A Case Study on How Spatial Affordances Shape First-Grade Students' Participation in Biology Inquiry Phases within Innovative Learning Environments

Abstract (første del av Introduksjonen)

To better prepare students to tackle the complex challenges of the 21st century, the OECD has advocated innovative learning environments. Emphasising the affordances of these environments, (Cleveland, 2016) has characterised these to “provide greater degree of spatial variation, geographic freedom and access to resources for students and teachers than traditional classrooms” (p.93).

In Norway, innovative learning spaces have been increasingly conceptualised as out-of school-learning spaces in the context of inquiry-based science education (IBSE). One arm of this approach are so-called Newton Rooms, providing the site of data collection of this study. IBSE envisions a student-centred pedagogical approach where phases of collaborative group learning experiences, are alternated with phases of discussions facilitating knowledge- and skill-building through reflection (Strat et al., 2023). Along with of the growing influence of IBSE and innovative learning spaces, there is, however, a growing concern in the science education community whether students are really actively participating as envisioned by these approaches (Zangori & Pinnow, 2019). Furthermore, as IBSE-researchers have traditionally explored student participation as means of their verbal utterances in classroom conversation (Kersting et al., 2023; Pimentel & McNeill, 2013), the field would benefit from further understanding of how spatial resources and their coordination by teachers influence student participation during IBSE activities in innovative learning spaces.

Combining the ecological sense of embodiment (Kersting et al., 2021) with Gibson's (1979) notion of affordances and socialsemiotics theory, this study aims to address these concerns by qualitatively exploring students' patterns of participation when they engage in group work and whole-class discussions about insect ecology.