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Cumulative knowledge building in distance and contact sessions: a comparison of two lessons in Technical Sciences on the topic of semiconductors for Grade 12

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ABSTRACT

The Professional Teaching Standards (PTs) in South African schools have established cumulative knowledge building as the core of the teachers' work. However, cumulative knowledge building is often understudied raising concerns for intervention. The main aim of the study was to gain insight of how cumulative knowledge building takes place in a lesson taught through distance and contact sessions. Legitimation Code Theory (LCT) was used as a conceptual framework, with a specific focus on semantic density (SD) and semantic gravity (SG). The study employed a qualitative case study approach, with pre-recorded video observations serving as the primary data collection method and document analysis serving as a supplement. The main findings of the study revealed that the contact lesson offers greater opportunities for cumulative knowledge building mainly because of the extended semantic gravity range and the teachers' ability to develop learners as knowers of science. The findings suggest that there is a need for distance teachers to adopt strategies that can extend the semantic gravity range. The findings raised more questions about the extent to which distance lessons may cater for learners' engagement and the processes of building learners into the knowers of science. Given the current state of our education as a result of COVID 19, it is crucial for distance lessons to contribute significantly to cumulative knowledge building. The findings of the study will significantly add to the limited knowledge and consequently influence the pedagogical strategies that teachers employ in their lessons to cater for the required demands in the education sector.

Key words: Professional Teaching Standards, cumulative knowledge building, Legitimation code theory, semantic gravity (SG), semantic density (SD), semantic ranges, COVID 19, contact sessions, distance sessions.