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From screen to student: University educators' perceptions of cognitive engagement in online learning

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The growth of online learning in higher education, accelerated by technological advancements and the COVID-19 pandemic, has highlighted the importance of accessibility and flexibility for students. Within this context, cognitive engagement refers to the mental effort students invest in understanding and internalising content (Martin & Borup, 2022), which is positively linked to student satisfaction and academic performance (Fredricks et al., 2019). As such, fostering cognitive engagement should be a central focus in the design and delivery of online learning.

This study explores how university educators perceive students' cognitive engagement in online learning. Limited research examines how university educators' perceptions align with learning designers and students on cognitive engagement in online learning. Understanding this is important as misalignment may impact student learning outcomes. Sixteen teachers (male: 8; female: 8) from two Australian universities completed a survey containing five Likert-scale items (from 1 = strongly disagree to 5 = strongly agree) exploring their perceptions of students' cognitive engagement across learner-to-teacher, learner-to-learner and learner-to-content interactions (Moore, 1989).

The questionnaire was adopted from Chi et al. (2014) Interactive, constructive, active and passive modes of cognitive engagement (ICAP) framework. The participants taught various disciplines including law, business, engineering, science, and health. Of the participants, five reported having fewer than five years of online teaching experience, six had between six and ten years of experience, and seven had been teaching online for more than 11 years. This sample represents the diversity of Australian university educators and demonstrated a balanced distribution of online teaching experience.

Preliminary quantitative analysis indicated that educators perceived students demonstrate higher levels of cognitive engagement when they: (1) received one-on-one guidance and feedback on assessments from their teacher (mean = 4.37), (2) engaged in peer debates on case studies (mean = 4.31), and (3) worked on authentic problem-solving tasks (mean = 4.31). In contrast, the majority of participants perceived lower levels of student cognitive engagement under the following conditions: (1) when teachers delivered online lectures for more than one hour (mean = 2.87), (2) when students were solely reading online content (mean = 2.5), (3) when students reading and clicking through an online presentation (mean = 2.75) and (4) when student watched a video (mean = 2.38) or pre-recorded lecturing video (mean = 2.43) without engaging in active strategies (mean = 2.38).

The initial findings suggested that university educators perceived student cognitive engagement primarily through their observations during online classroom and the quality of students' contributions to peer interactions and assigned tasks. Notably, educators expressed the view that activities, such as reading and clicking through online presentations, do not effectively foster cognitive engagement. This perspective stands contrary to Goode et al. (2022) claims, which suggest that such activities can contribute to learning outcomes. As this study is in its initial stage, the current sample size is relatively small. Ongoing data collection will increase participant numbers, enabling a larger-scale investigation into how university students perceive cognitive engagement in online learning. Expanding the sample will help to strengthen the robustness and generalisability of the findings. Furthermore, we will explore how these perceptions align and differ from those of learning designers and students. Ultimately, the

findings aim to inform learning design and teaching practices in higher education to promote effective online learning.

Keywords: University educator, Cognitive engagement, Online learning, Higher Education

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