Interpreting Engagement in Neurodiverse Learners: Insights from a Co-Design Workshop

Neurodivergent students, including those with ADHD and autism, often face barriers in higher education that impact their learning, well-being, and sense of belonging. In digital learning environments, student engagement is frequently inferred through observable behavioural signals, such as eye gaze, body posture, facial expression and gestures. However, these signals may be interpreted differently across neurotypes, raising concerns about the validity of current approaches.

This paper draws on insights from an interactive co-design workshop activity conducted in a higher-education context, providing exploratory insights into how engagement-related behaviours are interpreted across ADHD, ASD, and AuDHD learners. Through structured discussion and co-design activities, participants reflected on common behavioural signals and how these may be perceived by educators and automated systems.

Insights from the workshop suggest that behavioural indicators of engagement are highly context-dependent and often ambiguous. Behaviours typically associated with disengagement, such as gaze aversion, reduced facial expressions, or fidgeting, were frequently understood as forms of concentration, self-regulation, or sensory coping. Participants also highlighted potential risks associated with automated systems that rely on simplified behavioural interpretations, which may reinforce bias and increase the risk of misclassification.

The paper contributes a set of emerging themes and practical considerations for designing inclusive digital learning environments and AI-based engagement systems. It suggests moving away from one-size-fits-all models of engagement towards approaches that are context-aware and informed by neurodiversity, supporting more inclusive educational practice.