Abdessalam Ouaazki

Abdessalam's dissertation examines how Generative AI (GenAI) reshapes learning, cognition, and human–computer interaction in educational contexts, with a specific focus on computational thinking and GenAI literacy. It moves beyond assessing whether AI supports learning to investigate how, when, and under what conditions it influences learners' cognitive and behavioral processes. A central contribution lies in conceptualizing GenAI as an active learning partner, shaping reasoning, problem framing, and interaction strategies. The work identifies different interaction types (e.g., debugging, understanding, creativity, productivity) and analyzes their impact on learning outcomes. Empirically, the dissertation mainly relies on controlled experiments comparing AI-supported and non-AI conditions, measuring outcomes such as performance, engagement, enjoyment, credibility perception, and usability. It further explores how AI affects epistemic cognition, including how learners evaluate knowledge and trust information. Complementing these empirical studies, the dissertation develops and evaluates educational interventions aimed at fostering GenAI literacy, emphasizing scaffolding, critical prompting, and reflective use. Through a combination of systematic literature review, experimental research, and design-oriented approaches, the dissertation contributes empirical evidence and design principles for supporting meaningful and critical engagement with GenAI in learning environments.

In parallel, the author contributed to a policy-oriented project within the Swiss Learning Health System (SLSH), focusing on the FAIRness of Computable Biomedical Knowledge (CBK) in Switzerland. This work analyzes how biomedical knowledge can support faster and more scalable decision making in healthcare, provided it adheres to the FAIR principles (Findable, Accessible, Interoperable, Reusable). The project highlights key systemic challenges in Switzerland, including a hypercompetitive research environment, fragmented stakeholder ecosystems, technical and interoperability barriers, legal uncertainty, and ethical concerns surrounding sensitive health data. It proposes a set of actionable recommendations, such as improving attribution mechanisms for shared data, strengthening collaboration between researchers and legal experts, adopting standardized technical infrastructures, and developing robust ethical frameworks. By bridging research, policy, and practice, this work contributes to ongoing efforts to make biomedical knowledge more accessible, reusable, and impactful within learning health systems.