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# Propositions

accompanying the dissertation


## INTERACTIVE SIMULATION-BASED LEARNING TOOLS FOR TRAINING CHILDREN'S HELPLINE COUNSELLORS

by

**Mohammed AL OWAYYED**

-  1. Without cognitive feedback, simulation-based training systems cannot achieve their full learning potential.
-  2. Explicitly modelling values in training agent simulations makes it easier for trainees to learn how to apply motivational interviewing.
-  3. In social skills training systems, using large language models without explicit internal state representations to simulate humans generally leads to sub-optimal training outcomes.
4. In social skills training systems, behaviours aligned with the learning objectives should be exaggerated in the agents simulation.
5. General-purpose AI chatbots amplify existing learning motivation: they deepen learning for intrinsically motivated students and weaken learning for extrinsically motivated ones.
6. Educational training systems can be ethical only if they are designed with human values in mind.
7. Bayesian analysis provides more meaningful insights than frequentist analysis. (Kruschke et al., 2018; Makowski et al., 2019)
8. Researchers should only be allowed to submit an ethics application if they have previously reviewed ethics applications.
9. Pleasant MSc supervision is a joint responsibility: both student and supervisor need to adapt to each others working styles.
10. A PhD is like Super Mario: the stars are the milestones required to finish, but the coins and power-ups—many, tempting, and sometimes hidden—can enrich the quest and make you stronger for the next level.

These propositions are regarded as opposable and defensible, and have been approved as such by the promotor Prof. dr. ir. W.P. Brinkman and the copromotor dr. M.L. Tielman

 Pertains to this dissertation.