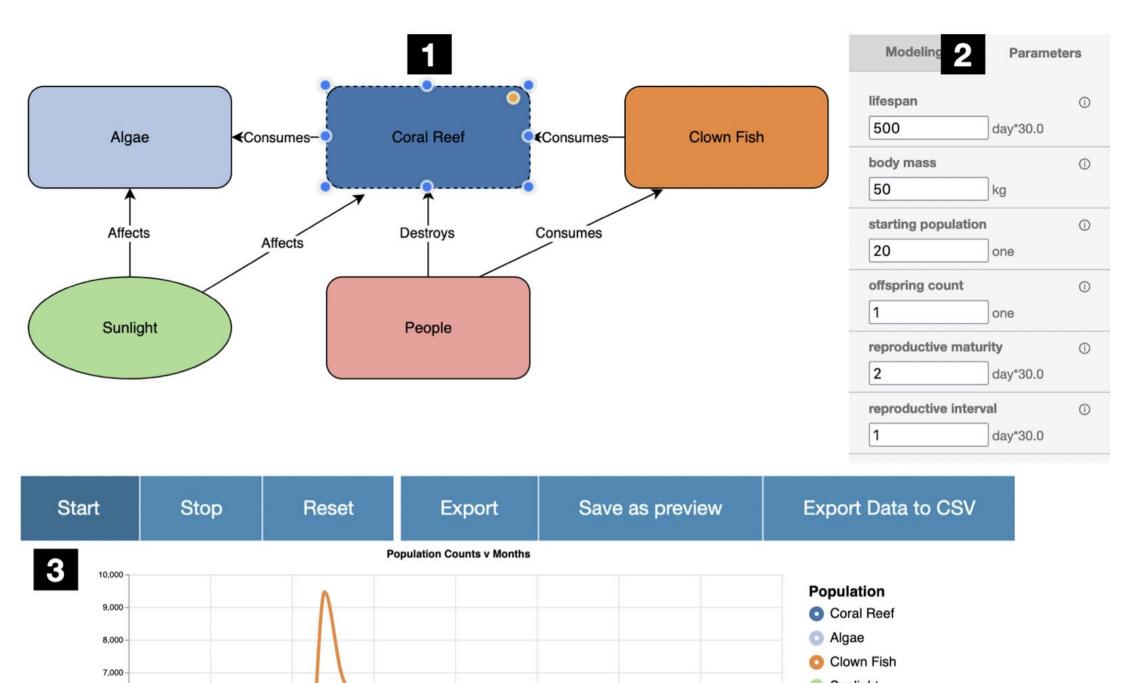
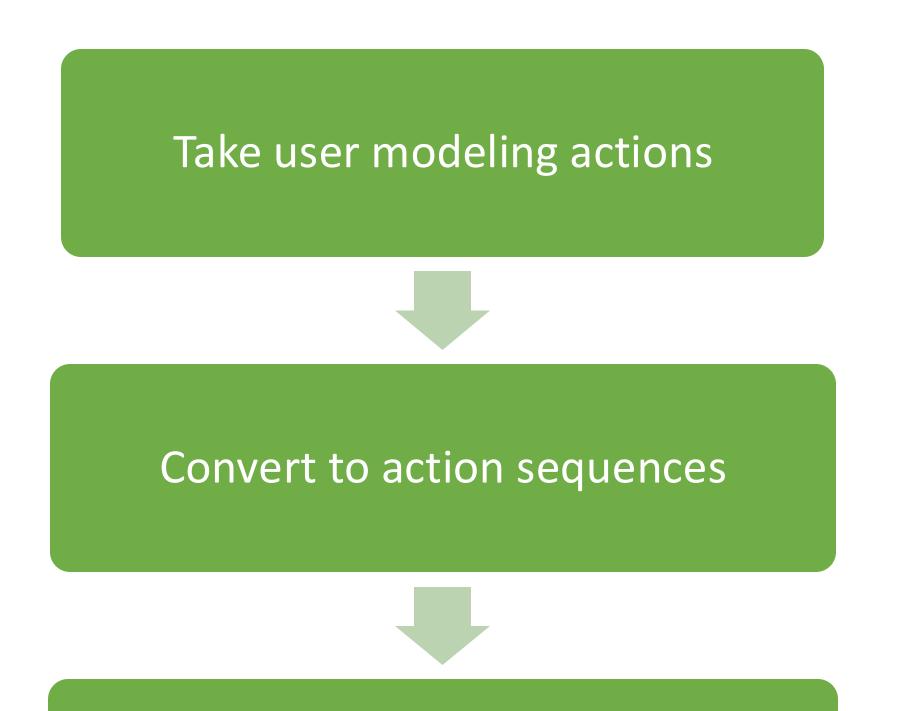
A Personalized AI Coach to Assist in Self-Directed Learning

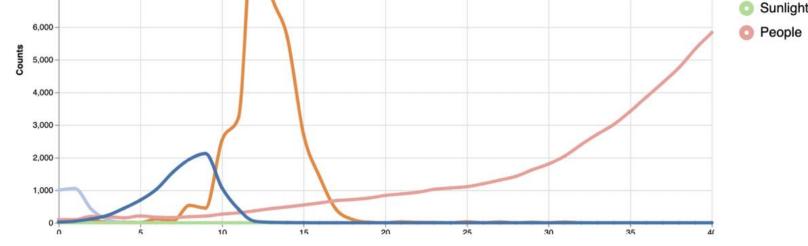


Stephen Buckley, John Kos, Rahul Dass, Cathy Teng, Kenneth Eaton, Sareen Zhang, Ashok Goel Design & Intelligence Laboratory, School of Interactive Computing, Georgia Institute of Technology Contact: John Kos (jkos3@gatech.edu)

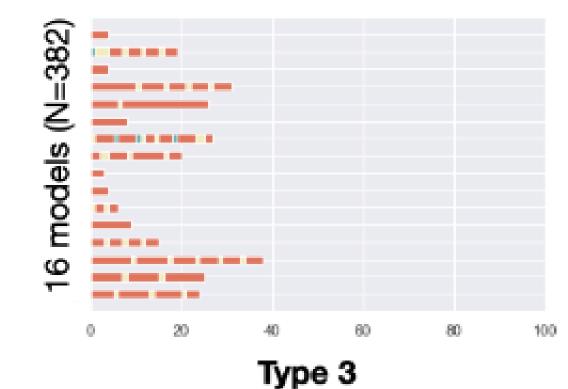
In VERA: Inquiry Based Modeling to Action Sequences

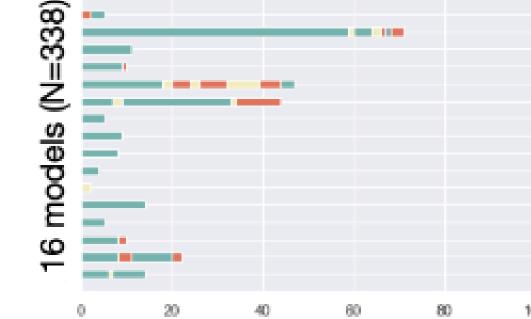




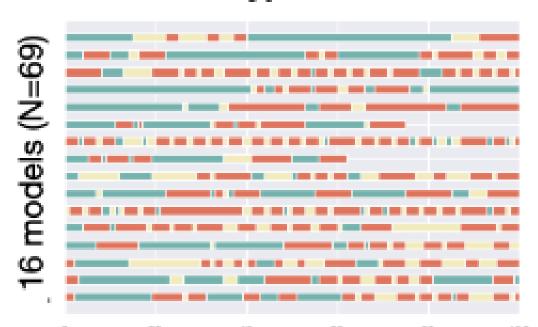


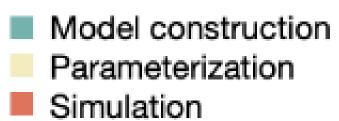
Type 1





Type 2





Taken from: Sungeun An, Spencer Rugaber, Jennifer Hammock, and Ashok K. Goel. Understanding self-directed learning in an online laboratory, 2022.

Find string edit distance to closest user type cluster

Offer personalized feedback to nudge users toward exploration

Encourage users to plan, and then reflect on their actions

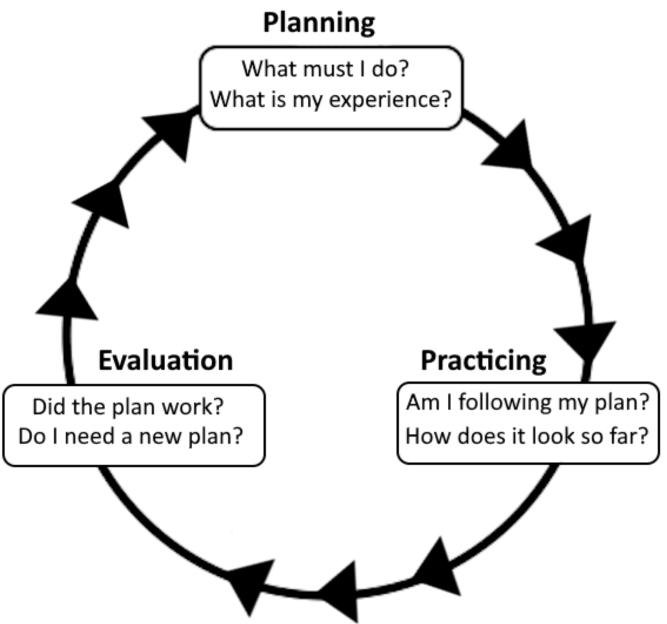
User Clusters

Observers: Mainly simulated the model and did not make changes

Constructors: Mostly added new nodes to the model but did not parameterize or simulate

Full Explorer: Engaged in a balance of all three activities

Self-Directed Learning Cycle



- 1. **Planning**, as found in the self-regulated learning cycle, is a process that occurs fully in the mind. For this reason, we do not have action logs that correspond to the planning phase.
- 2. **Practicing**, in the self-regulated learning cycle is when a learner is taking steps toward completing their plan. This corresponds to constructors who focus solely on the practice step of the cycle by only constructing within VERA.

3. Evaluation, typically occurs after the learner has taken steps toward their goal in the self-regulated learning cycle. Observers in VERA are continuously evaluating their current model by simulating without planning or practicing.

Self-Directed Learning promotes greater learning and life outcomes!

This research is supported by the National Science Foundation under Cooperative Agreement DRL-2112532 with the National AI Institute for Adult Learning and Online Education (aialoe.org). Any findings and conclusions expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.