

Learn Diffusion of Innovation as Complex Phenomena - A report from pilot study

Jun-Song Huang

National Institute of Education

Manu Kapur

National Institute of Education

Abstract: How people learn complex phenomenon is a relatively new but growing field in the learning and cognitive sciences. In this paper, we report on a 12-week workplace learning case study where two innovation diffusion decision makers at a university (in charge of educational technology innovation diffusion strategies at the university) collaboratively build and simulate agent-based innovation diffusion models based on their embodied experience with diffusion phenomenon.

Past research largely took knowledge transfer paradigm and aimed to change learners conceptual understanding of complex systems. In such research, learners usually do not have sufficient embodied experience with the complex phenomenon that they learn. In our research design, learners collaboratively participate in a set of iterative agent-based modeling activities that were coupled with their everyday interaction with the actual diffusion phenomenon. Informed by the philosophical foundation of Complexity Theory, we regard knowledge as knowing, and our research aims to help learners improve their performative capacity in acting as decision makers in complex diffusion phenomena.

The preliminary analysis of the baseline interview and the discourse of the modeling activities demonstrate the following performative development: (1) learners started to take diffusion systems initial condition into consideration; (2) learners started to intentionally leverage on subject group peer social interactions; (3) learners started to synergize their diffusion strategies, rather than treating different diffusion strategies as isolated approaches which only have linear add-on effects. (4) learners self reported to be more resourceful and capable in performing their decision making role in innovation diffusion.

A critique to our research design is our developmental and relativism stance. Since Complexity Theory suggests that knowledge is descriptive, interpretative and iterative, we argue that the stance taken in this research is justifiable for learning of complex phenomena.