

Redesigning Your City – A Constructionist Environment for Urban Planning Education

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Abstract. In spite of decades of use of agent-based modelling in social policy research and in educational contexts, very little work has been done on combining the two. This paper accounts for a proof-of-concept single case-study conducted in a college-level Social Policy course, using agent-based modelling to teach students about the social and human aspects of urban planning and regional development. The study finds that an agent-based model helped a group of students think through a social policy design decision by acting as an object-to-think-with, and helped students better connect social policy outcomes with behaviours at the level of individual citizens. The study also suggests a set of new issues facing the design of Constructionist activities or environments for the social sciences.

Keywords: agent-based modelling, NetLogo, social policy education, constructionism.

1. Theoretical Framing

A cornerstone of democracy is a well-educated citizenry that is able to participate in discussions about how to organize society through the design and implementation of policies (Converse, 2006; Druckman, 2001). However, research shows that citizens struggle with identifying policies that they themselves support, and that they often vote for parties that do not support the same policies as they do (Luskin, 1987, 1990).

Shtulman and Calabi's (Shtulman and Calabi, 2008, 2012) work suggests that part of the explanation to this paradox is that citizens fundamentally do not understand the underlying issues, and that they therefore are unable to reason about policies to address them. Ranney *et al.*'s (2012a, 2012b) work on global warming policies suggests that taking a mechanism-based approach to explaining the underlying issues to citizens may help address this gap; in their studies, the better people understood the mechanistic relationship between infrared light, energy, CO₂, and global climate change, the more likely they were to shift their opinion towards supporting policies that would reduce CO₂ emissions.