

# Modelling4All and the Epidemic Game Maker

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## Didactic philosophy

Modelling4All attempts to address one of the biggest challenges to the constructionist approach to learning: including non-programmers. We believe that while giving learners the skills necessary to build their own models may be the end goal, the learning curve is sometimes so steep that we lose learners on the way.

To address this issue, Modelling4All enables learners to “compose” models from blocks of code, called micro-behaviours. These micro-behaviours can be anything from the simplest behaviour (move-forward-every-t) that can be added an agent, to pre-defined agents that can be easily “plugged” into a model. Learners can even, by the click of a mouse, deploy hundreds of agents in complicated social networks. By enabling learners to build models ‘middle-out’ (as opposed to ‘bottom-up’) we believe that we get the best of Constructionism while avoiding the pitfalls.

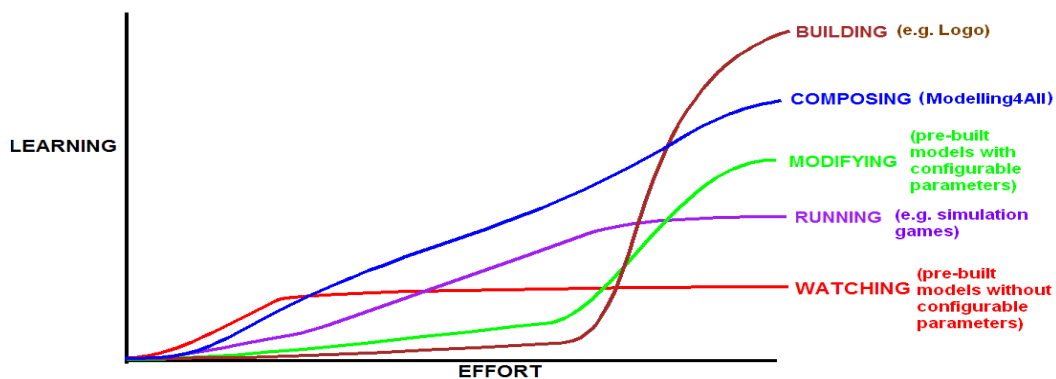


Figure 1. Learning vs. Effort for different interactions with models.

## Epidemic Game Maker

Epidemic Game Maker was built for the Royal Society’s Summer Exhibition 2010. It aims to teach children (10-15) about epidemics from the perspective of a public health official in 2 minutes (!) with an optional extension of up to 5-7 minutes.

The learner starts with a simple model showing children going back and forth to school. Just one child is infected with the flu. On running the model, the learner can see children moving around in the model-space, contaminating each other. By adding agents (e.g., more schools, adults, work places) and functionality (e.g., various policy interventions such as school closings) and by exploring the parameter space, children are able to build, run, and configure models the models in minutes. In the process students are earning about modelling, epidemics, and public health policies.

## Keywords (style: Keywords)

constructionism, learning, interface, non-programmer,