

This model is extremely simple as it is built on an analytical model so as to illustrate a demonstration based on probabilities. This analytical model is itself a simplification of an ABM model published « When overconfident agents slow down collective learning, Simulation, 88, 01, pp 33-49. »

Description of the model:

There are three types of agents who have different knowledge about a topic: either an agent is of level 0 or 1 or 2. All agents of level 0 know nothing; agents of level 1 know a bit; agents of level 2 know perfectly the topic.

Agents all have the same (bounded-)confidence, which is very small: which makes agents 0 and 1 able to communicate because they are close enough, as well as agents 1 and 2. However, agents 0 and agents 2 cannot communicate with each other. It implies that if there are no agents 1, agents 0 will stay ignorant forever.

The idea is that agents who are knowledgeable should have a higher probability to influence those who know nothing, since it was the basis of the first model. In this model it is possible to change this probability.

Manipulations on the screen:

It is possible to choose the respective probabilities of influence for agents 0 to agents 1; for agents 1 to agent 0 or agents 2; for agents 2 to agents 1.

If the probability for agents 1 to make agents 0 more knowledgeable is much smaller than the probability of agents 2 to convince agents 1, then these medium-knowledge agents disappear and the communication does not take place anymore: agents 0 stays ignorant.

It is possible to choose the number of agents in each category at initialization. If there are too few agents 1 compared to agents 2, these medium-knowledge agents disappear and the communication does not take place anymore: agents 0 stays ignorant.