

Vennix, Jac A.M. (1992): Model-building for group decision support: Issues and alternatives in knowledge elicitation

In this paper Vennix is mapping out different techniques for eliciting knowledge from groups in the System Dynamics model building process. The problem focus of this paper is how computer simulation models can be built in an effective way to support decision making by using different resources of information (mostly experts). As described by Vennix, accessing the mental models of key actors is remaining as an art (also in a structured setting). Furthermore the paper is describing the model building process, results from the group process research and guidelines for the knowledge elicitation process.

The problem:

- Multiple streams of information: Quantitative data, written records, information in mental model, etc.
- Accessing the minds of experts as an art → Complex process to draw out information from groups.

The model building process

- Seven stages: 1. Problem identification and definition; 2. System conceptualization; 3. Model formulation, 4. Analysis of model behavior; 5. Model evaluation; 6. Policy analysis; 7. Model use/implementation.
- Eliciting information: Diversity and quantity of ideas is greater in nominal groups (non-interacting setting).
- Problem solving in SD-modeling: At its best, when highly organized and systematized.
- Modes of evaluation: Judgment and choice. → Conclusion is not always the same.

Basic results from group process research

- Asking experts in groups lead to other results, than asking them individually.
- Improvement by subdividing tasks into subtasks. → Structure improves group performance.
- Successful setting: Separating the modeler role from the group facilitator.

Guidelines (not complete)

- Eliciting tasks at its best by individuals or nominal noninteracting groups.
- Evaluation tasks better in structured group sessions (Delphi technique, multiattribute utility theory, social judgment analysis, nominal group techniques, etc.)
- Model building induces learning → Iterative cycles.
- The more people involved, the more structure is needed in the process.
- And the less time is available, the more structure is needed.