Companion modelling and participatory simulation: A glimpse

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A glimpse of simulation/gaming

Simulation/games are 'usually' used to communicate **science**, such as in educational, environment or government organizations. Another developing use is to help organizations to **solve problems** or **make decisions**. Two successful and related simulation/gaming approaches, called companion modelling (ComMod) and participatory simulation (PS), have been developed over the last two decades, and constitute fairly elaborate decision-making aides and problem-solving tools. **Debriefing** is always an essential component.

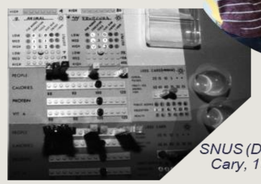
Experiential learning & multimodal communication


CLUG (Feldt et al. 1972)

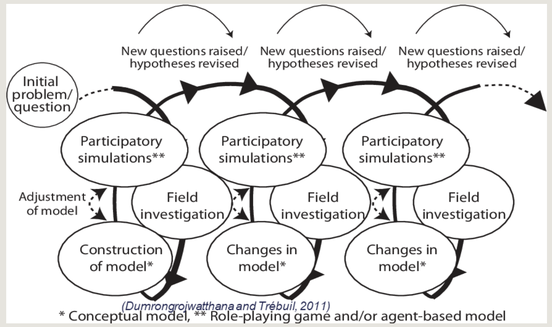

HEX (Duke, 1976)

StarPower (Shirts, 1969)

Project IDEALS (Crookall, late 1980s)


SNUS (Duke et Cary, 1975)

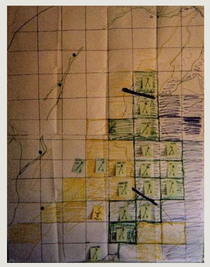
A glimpse of companion modelling

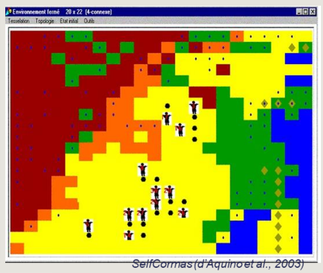


(Dumrongrojwatthana and Trébuil, 2011)
* Conceptual model, ** Role-playing game and/or agent-based model

ComMod generally involves building a **model** (often computerized, using ABM tools) of socio-ecological interactions and factors of, say, a farming community. **Stakeholders** contribute substantially to the design of the model, which then forms the basis for participation in a large-scale **role-play**. Often the design process takes several **meetings** (each of several days) over a period of weeks or even months; this is both a strength and a weakness. ComMod has been successful round the world in helping to solve deep-rooted community-ecology **problems**.

Modelling and simulation to support collective action




SelfCormas (d'Aquino et al., 2003)

ComMod.org

A glimpse of participatory simulation

The main characteristic of a PS that it explicitly participative. **Stakeholder-participants** share collective control over the decisions that affect them. PS provides a **framework** allowing the participants to collectively explore and develop ideas, concepts, strategies and plans that are beneficial to them and their communities. A PS tends to capture **emerging phenomena** and trace **developing relations** in regard to social, industrial and territorial resources and demands on those resources; it can manifest powerful **foresight** or future projection properties.

Purposes for a PS include:
- Clarifying critical and conflictual issues
- Collective thinking about socio-ecological systems and their complexity
- Support for collective action

PS overlaps to a large degree with ComMod. One main difference is that it does not necessarily involve the long process of building a complex ABM with stakeholders. A PS tends to be easier to develop and implement because its design does not require as much toing and

A PS in action

In **LittoSIM**, local authorities and managers interact with a spatially-explicit, coastal-flooding model to discuss together about possible **alternative** measures and territorial **adaptation** pathways.


(Becu et al., 2017)

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https://oceansclimate.wixsite.com/oceansclimate

Also 52nd conference of ISAGA (International Simulation And Gaming Association), La Rochelle, 2021 — dates to be announced