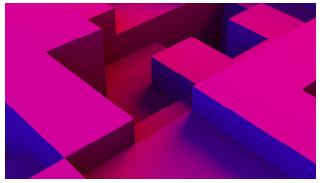
Facilitation style is crucial for result

Rule based facilitation style:
the referee/judge

Open simulation games style: the co learner/meaning maker

Continuum



- **Example: the Beer game**

Example: a policy game

- **A mindful question: are rule based simulations really possible?**
- **Everyone will have their own interpretations or rules, roles, resources etc….**

- **The facilitator is determinant for the type of game that is played!**

WHY: PURPOSES OF SIMULATION GAMES

		Performance criteria defined in advance?	
		yes closed simulation	no open simulation
Who has to learn from the simulation game?	participants	**training / education**	**development / exploration**
	others	**assessment**	**research**

Table 1 Applications of simulation games

- Peters and Vissers typology 1998
- Caluwé 2012 Functions of policy games
  1. **Exchanging perspectives**
  2. **Understanding uncertainties and dynamics**
  3. **Ex ante evaluation**
  4. **The double learning experience**

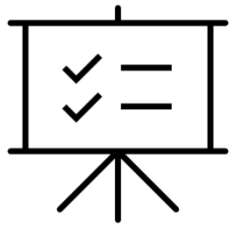
adaptive learning interventions: System perspectives for facilitating learning

Marieke de Wijse, sectie Interventie Methodologie Management sciences

NOV 2025

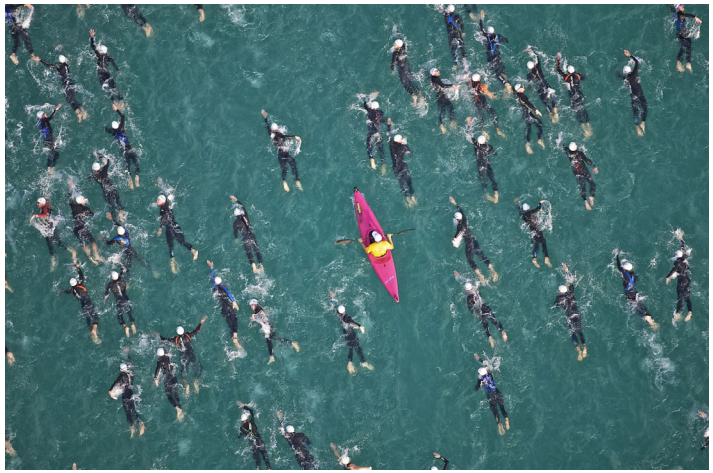
Radboud Universiteit

OVERVIEW OF THE PRESENTATION



1. What is (social) systems theory and why is it relevant?
2. **Diagnostics** with systems theory:
   a. ***Ashby's Theory of Adaptation and Learning***
   b. ***The Viable Systems Model (VSM): The five functions needed to learn***
   c. ***Learning levels Argyris***

Reflection and discussion



BECAUSE WE NEED HANDHOLDS TO KNOW

1. **When to intervene**

   Do you need to? (time available/safety)

2. **With what to intervene on what level?**

   Individual/group/organization

   What lens? Learning levels and/or learning functions

&

3. How to intervene

Amplification: adding new perspectives/enlarging the gap

Or attenuation (stepping in the gap/bringing focus)

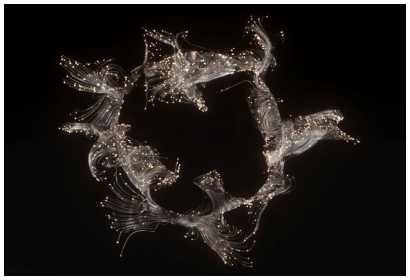
THE DIAGNOSTIC GLASSES

- Systems science helps recognize patterns
- Making (dis)functional interactions and structures visible
- Be able to intervene faster and more effectively

WHAT CAN A FACILITATOR DO TO STIMULATE LEARNING? LESSONS FROM ASHBY

1. **Increase variation (Amplify)**:

Add new incentives or options.

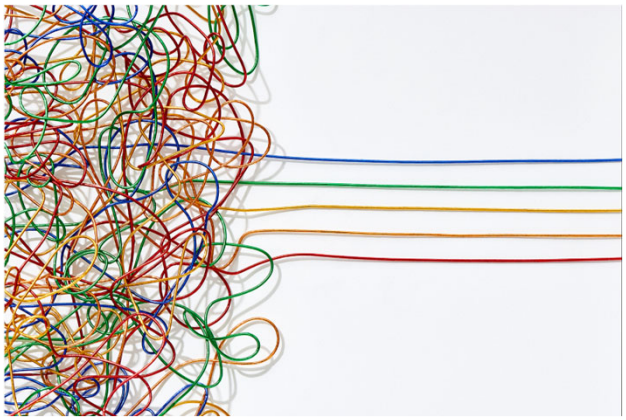


2. Reduce variation (Attentive):

Absorbing complexity.

Examples

- Organising reflection sessions
- Focus on challenges



ARGYRIS AND LEARNING IN SYSTEMS

- **first order learning**: content/procedures
- **Double-loop learning:** adjusting processes (norms)
- **Triple-loop learning:** reflection on the way of learning itself
- Helps understand behavior in simulations and in organizations

THE ROLE OF THE SYSTEMS MODEL (VSM) S. BEER

Five functions for a learning system:

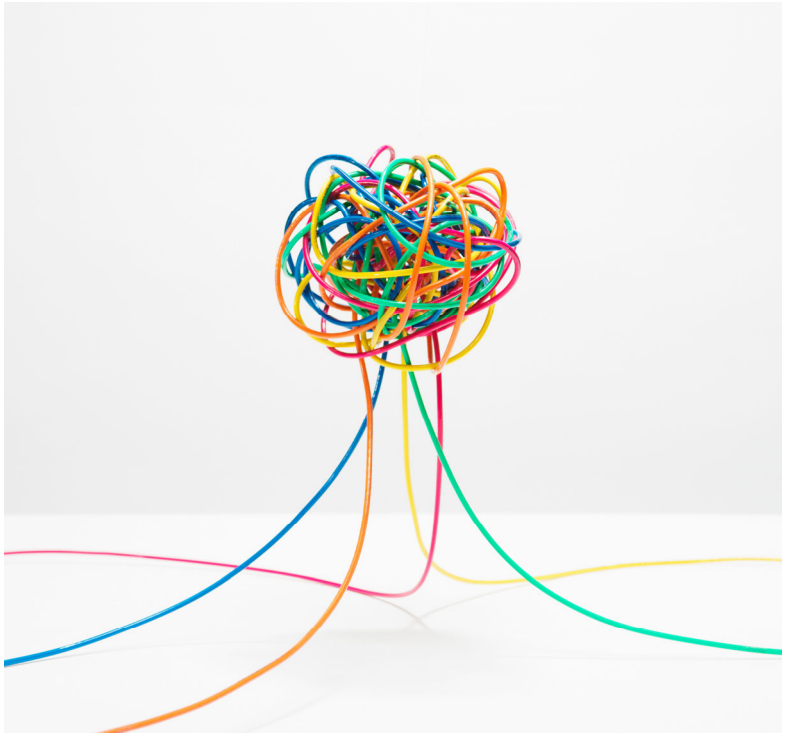
1. **Coordination**: Align roles

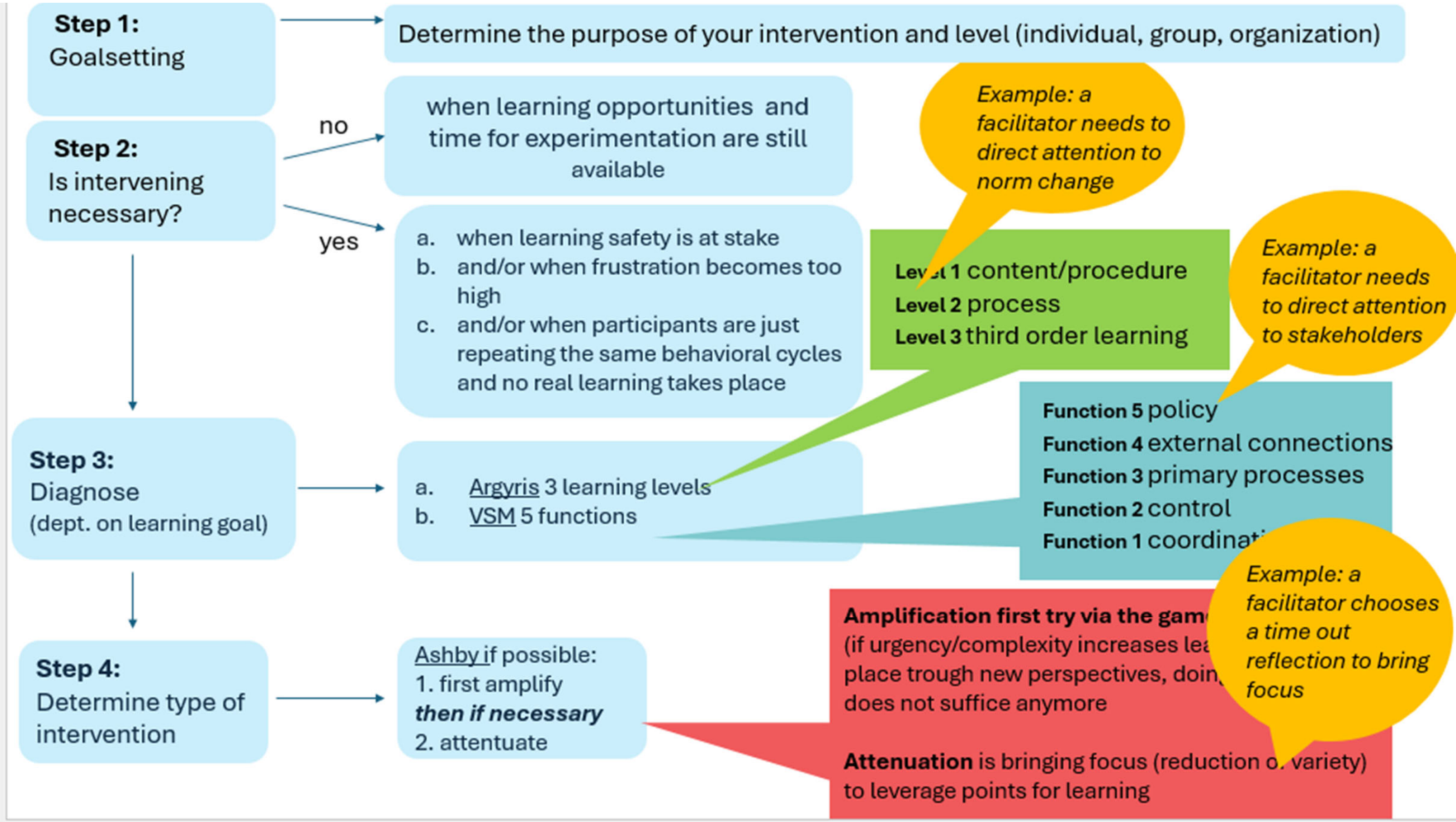
2. **Control**: Monitoring learning objectives

3. **Internal processes**: Processing feedback

4. **Innovation**: adding new incentives to promote learning

5. **Policy**: Determine strategy




Step 1:
Goalsetting
Determine the purpose of your intervention and level (individual, group, organization)
Step 2:
Is intervening necessary?
no
when learning opportunities and time for experimentation are still available
yes
a. when learning safety is at stake
b. and/or when frustration becomes too high
c. and/or when participants are just repeating the same behavioral cycles and no real learning takes place
Example: a facilitator needs to direct attention to norm change
Level 1 content/procedure
Level 2 process
Level 3 third order learning
Example: a facilitator needs to direct attention to stakeholders
Function 5 policy
Function 4 external connections
Function 3 primary processes
Function 2 control
Function 1 coordinat
Step 3:
Diagnose
(dept. on learning goal)
a. Argyris 3 learning levels
b. VSM 5 functions
Step 4:
Determine type of intervention
Ashby if possible:
1. first amplify
then if necessary
2. attentuate
Amplification first try via the gam
(if urgency/complexity increases lea
place trough new perspectives, doin
does not suffice anymore
Attenuation is bringing focus (reduction o variety)
to leverage points for learning
Example: a facilitator chooses a time out reflection to bring focus

VSM AS A CHECKLIST FOR TYPES OF INTERVENTIONS

Facilitators can make use of the

5 functions as a checklist:

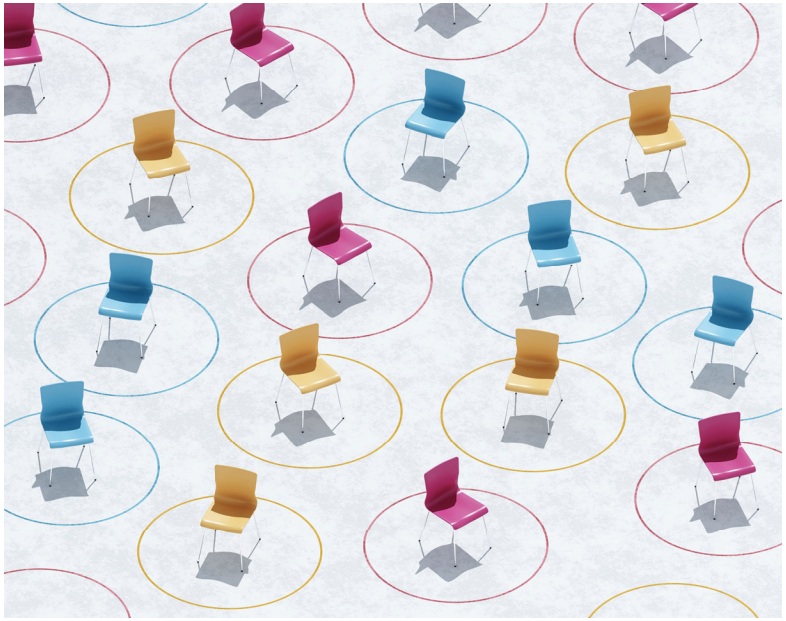
Internal processes: Providing feedback

Coordination: Making the game playable

Control: Checking whether goals are being met

Innovation: Ensuring that learning is done through new stimuli

Policy: Creating conditions



The facilitator as part of the viable system

The facilitator supporting the adaptive learning system of the players

Either by

- **Filling the gap (temporarily)**

And/or

- **Enlarging the gap! (possibly on different levels)**

IN SUM THE AFF FRAMWORK IS THERE TO KNOW

1. **When to intervene**

   Do you need to? (time available/safety)

2. **With what to intervene on what level?**

   Individual/group/organization

   What lens? Learning levels and/or learning functions

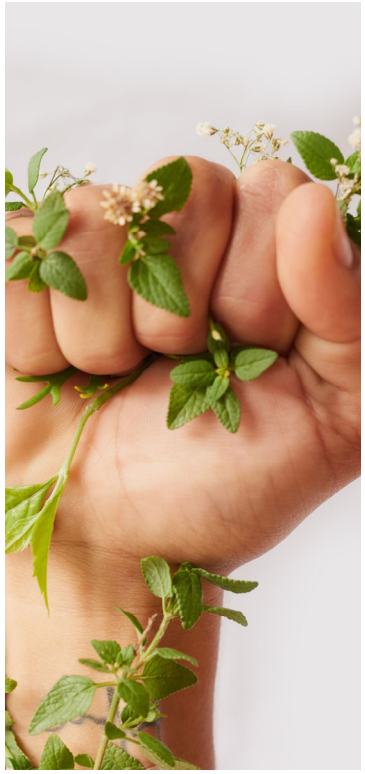
&

3. How to intervene

Amplification: adding new perspectives/enlarging the gap

Or attenuation (stepping in the gap/bringing focus)

2 OPTIONS IN GAME/ TIME OUT



Intervention via the gameplay

Intervention in reflection time outs

Question: when would you do what?

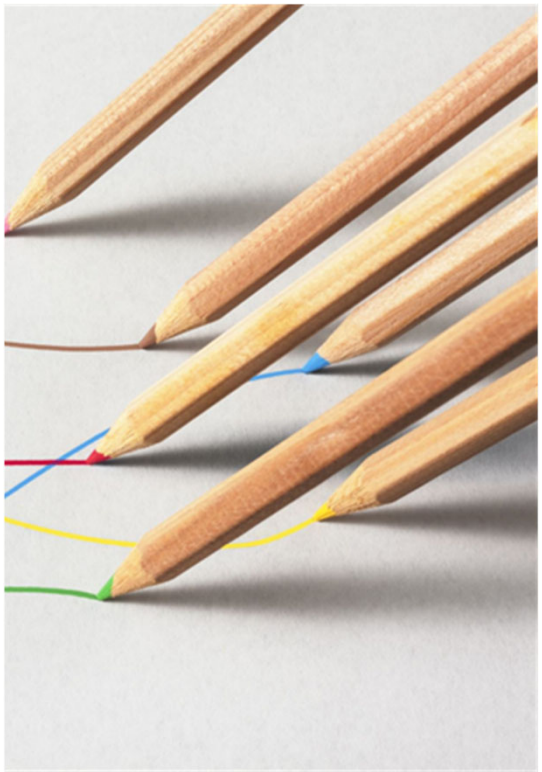
SUMMARY OF THE LEARNING FRAMEWORK BASED ON SYSTEMS THEORY

Step 1: determine whether you should intervene at all by, for example, an individual/or group-oriented time out or let the game do its work through stimuli in the game

When people keep following circles

When frustration gets too high

Ethics/learning safety is at play



Step 2 (Ashby): determine whether you need to amplify (enlarge) or attentuate (reduce).

First you try to see if they can analyze themselves by providing insight into the problem field (amplification)

If that doesn't work or you don't have enough time, focus on where the most important challenges arise (Attentuate) with structured questions

Step 2 (Beer) shows exactly which functions you are going to intervene on.

What do they leave behind? Where are the learning opportunities? Back to step 1

SOURCES

1. Achterbergh, J., & Vriens, D. *Organizations: Social Systems Conducting Experiments*

2. Ashby, W. R. *Introduction to Cybernetics*

3. Beer, S. *The Viable System Model*

4. Marieke de Wijse-van Heeswijk, *Adaptive Learning and Facilitator Interventions* (in press, 2025)

Future publication of the Game Science Group:
By Marieke de Wijse-van Heeswijk PhD, em. Prof Jan Klabbers (university of Bergen, is ook werkzaam geweest aan de RU, prof Sebastiaan Meijer (KTH Stockholm)

Title:

Adaptive learning and the functions and interventions of the facilitator

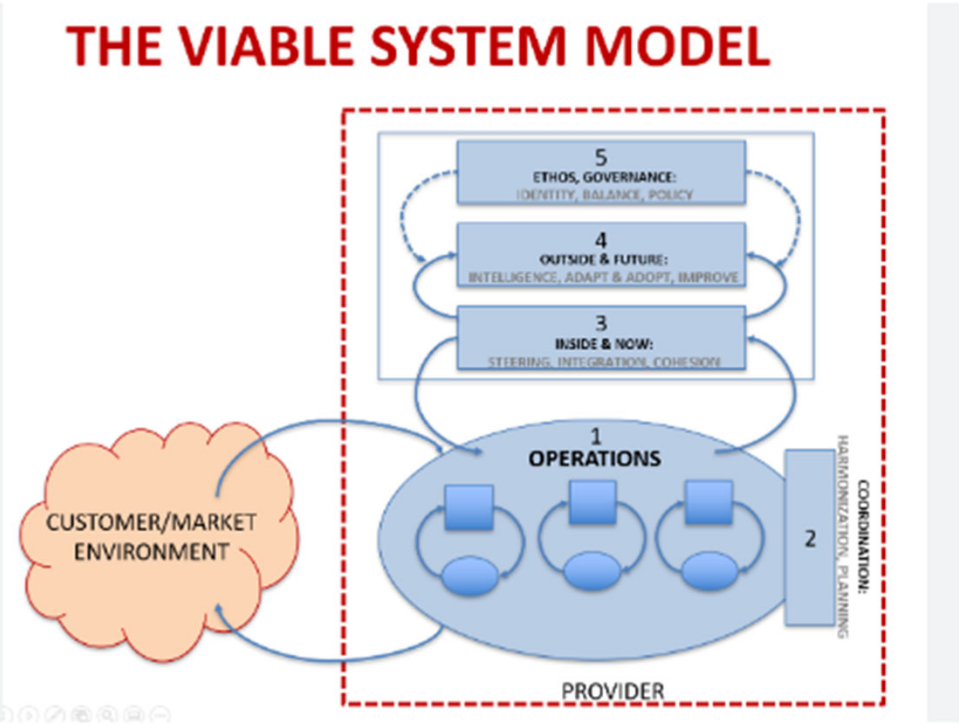
A theory based on a systems theoretical perspective

Simulation and Gaming Journal, In press 2025

The VSM functions in relation to each other

Picture borrowed from
https://usm-portal.com/het-viable-system-model-vsm/

https://vsmg.lrc.org.uk/screen.php?page=recursion



The vsm as recursive model

"To cybernetic eyes all viable organisations look exactly the same.
They are all underwritten by the same laws."

The VSM roles can be applicable to different layers/roles

For example:

- The ***role of the facilitator*** in optimizing learning conditions
- The ***organization*** that is represented in the SG
- The ***role of the teams*** players form
- The ***individual role*** of the players

And they are all connected and respond to eachother