Exploring novice facilitated modelling supported by scripts

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The challenge

- To investigate behavioural human aspects related to modelling in problem solving (Hämäläinen et al 2013), particularly qualitative modelling within workshop settings (Franco & Rouwette 2011)

- A response to the call to explore 'non-expert use of OR methods' (Hämäläinen et al 2013)

- Empirical attempt to assess the claim that 'scripts' (Ackermann et al 2011) can support novice facilitators in managing Facilitated Modelling (FM) (Franco and Montibeller, 2010) workshops and achieving outcomes

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FM, novices and scripts

- Skills and competencies are required for managing FM workshops (Huxham and Cropper 1994; Franco and Montibeller 2010)

- Acquiring and exercising skills and competencies is challenging for *novices* (Ackermann 2011), affecting their ability to successfully manage FM workshops

- Use scripts to transfer facilitation expertise to novices and help them successfully manage FM workshops (Ackermann et al 2011)

- Little empirical evidence of how scripts can be used by novices to manage FM workshops

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Aim of research

- Assess how scripts are used by novices to manage FM workshops through the acquisition and exercise of skills and competencies, and how the use of scripts relates to workshop outcomes:

  - Micro-level analysis of transcript of 1-day Viable Systems Model (VSM) workshop within a food cooperative in DK

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Theoretical framework

Facilitation roles P, C, and S
(Huxham and Cropper 1994)

- **P**: managing the social process of group interaction and debate
- **C**: managing the complexity of the content of the problem by modelling
- **S**: providing input of expertise, knowledge and/or opinion into decision making
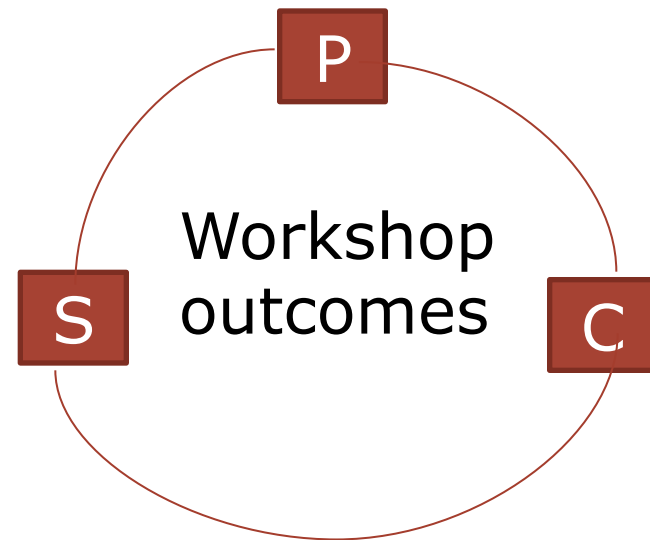
Operationalising P, C and S

- Facilitation skills and competencies in FM literature

Examples:

- **P**: asking questions; active listening-acknowledging
- **C**: using the model to enhance participants' contribution
- **S**: explaining technology (VSM)

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Analytical approach

- Coding scheme developed

- Unit of analysis: segments in which VSM tasks are carried out and/or topics discussed, and novice uses scripts (15 segments)

- Turns in which novice replicates, carries out, and/or refers to the content (statements, questions and guidelines) of the scripts coded

- Behavioural patterns spotted

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Active listening (P) – explaining technology (S)

| Turn and participant	Transcript	Reference to scripts
1 P1	Well, coordinate...people should sign up for guards *((in the shops))*, but this is kind of something else than...this is more the administrative part [...]	
2 N	This administration thing is like in the background *((of the VSM))* ((1)), you are not here to provide administration ((code: **AL-R** (**P**))). For example like a manufacturing company, your primary activities do the manufacturing like the units, where the machinery is placed and where they produce the products ((code: **UT-ETSL** (**S**))) ((2))	((1)) Possible examples of meta-systemic functions are: time tabling in schools; regular meetings; administration; coordinators group, etc. ((2)) Example of a primary activity: in a manufacturing business the primary activities are the units that do the manufacturing
3 P	So it is packing and selling? (('selling' is added to the VSM as a primary activity))	

# Active listening (P) – externalising by modelling (C)

Turn and participant	Transcript	Reference to scripts
1 P5	We have even a part there […] *((in S3 of the VSM))*, which coordinates the guard plan, well a part under the shops group	
2 P3	Yes, in Amager *((a local shop))*	
3 P5	Yes, it is called team-link […]	
4 N	O.K., team-link and is it something that other shops could also have, or? ((code: **AL- C (P**))) ((1)) Because for example we could then write it in green *((in the VSM))*, that it is something that could be developed further ((code: **HGN-E (C**))) ((2))	((1)) Building System 3 of the VSM and ask participants: "Are there mechanisms to provide synergy (mechanisms that ensure regulation and optimisation) to the primary activities?"

((2)) Building System 3 of the VSM - guideline: fill in System 3 of the VSM with info coming from participants; use a green pen to high-light what is missing or needs to be developed further in System 3 |
| 5 P1 | Well, both teams and team-link are something we could indeed develop further, anyway in the big departments, I think, because it creates actually synergy between the different people ((N updating the meta-systemic diagram)) | |

Active listening (P) – responding to needs (P)

Turn and participant	Transcript	Reference to scripts
1 P3	I think today has been incredibly exciting and inspiring, but I am worried that this becomes a knowledge, which remains among us, or what are we doing with what we have experienced today and what we have been talking about?	
2 P1	But should we not talk about this?	
3 P4	But maybe we could open for discussion here and talk about how to take this further	
4 N	Yes ((code: **AL-ACK** (**P**))), because the next step would be like to try to implement some of these things and how KBHFF can do that. Yes ((code: **AL-ACK** (**P**))), we can discuss now like how to implement an action plan ((code: **DM-RN** (**P**))) ((1)) ((in the following the participants formulate and agree on an action plan))	((1)) Wrapping up and ask participants: "How can we use and implement the VSM?" Discuss and agree on next steps

Workshop outcomes
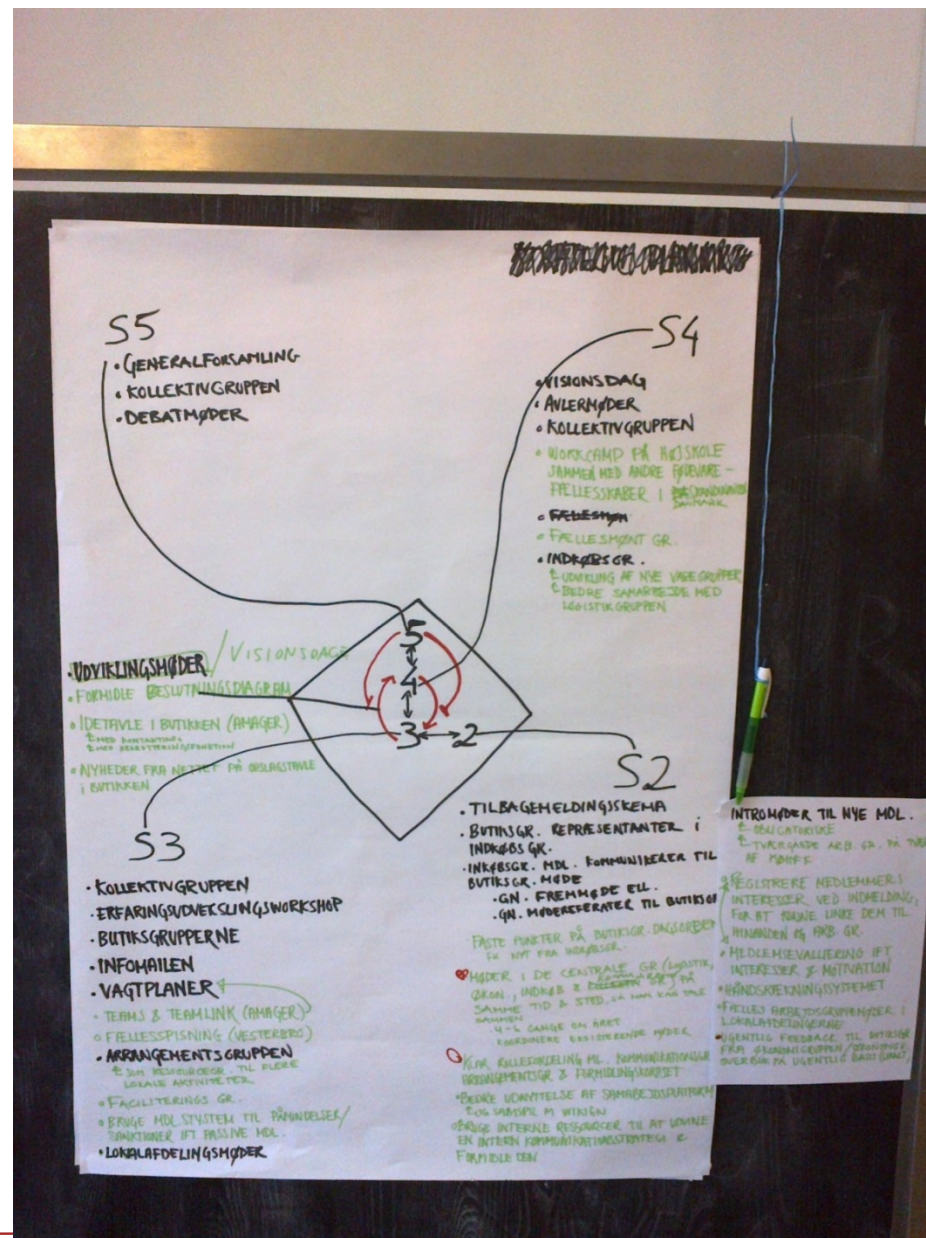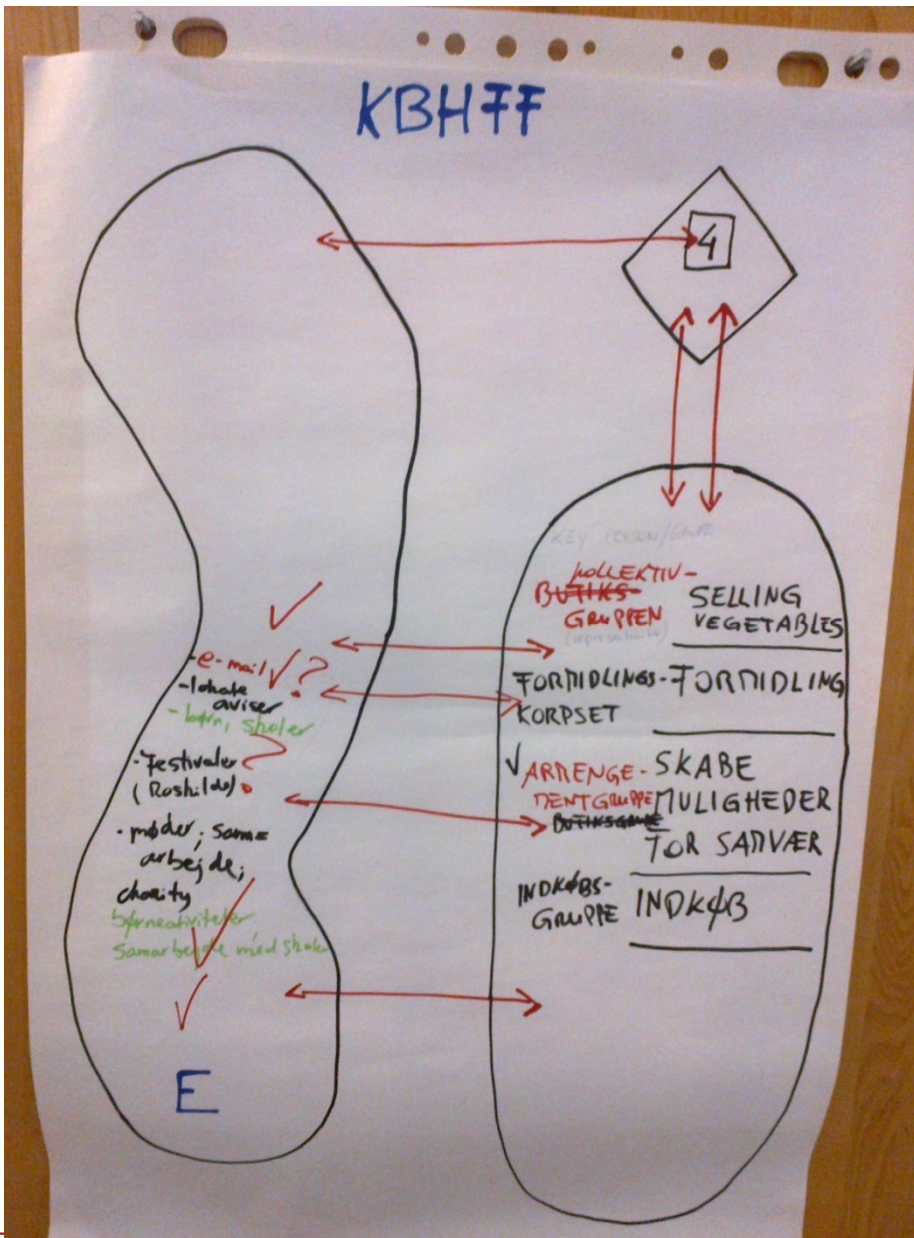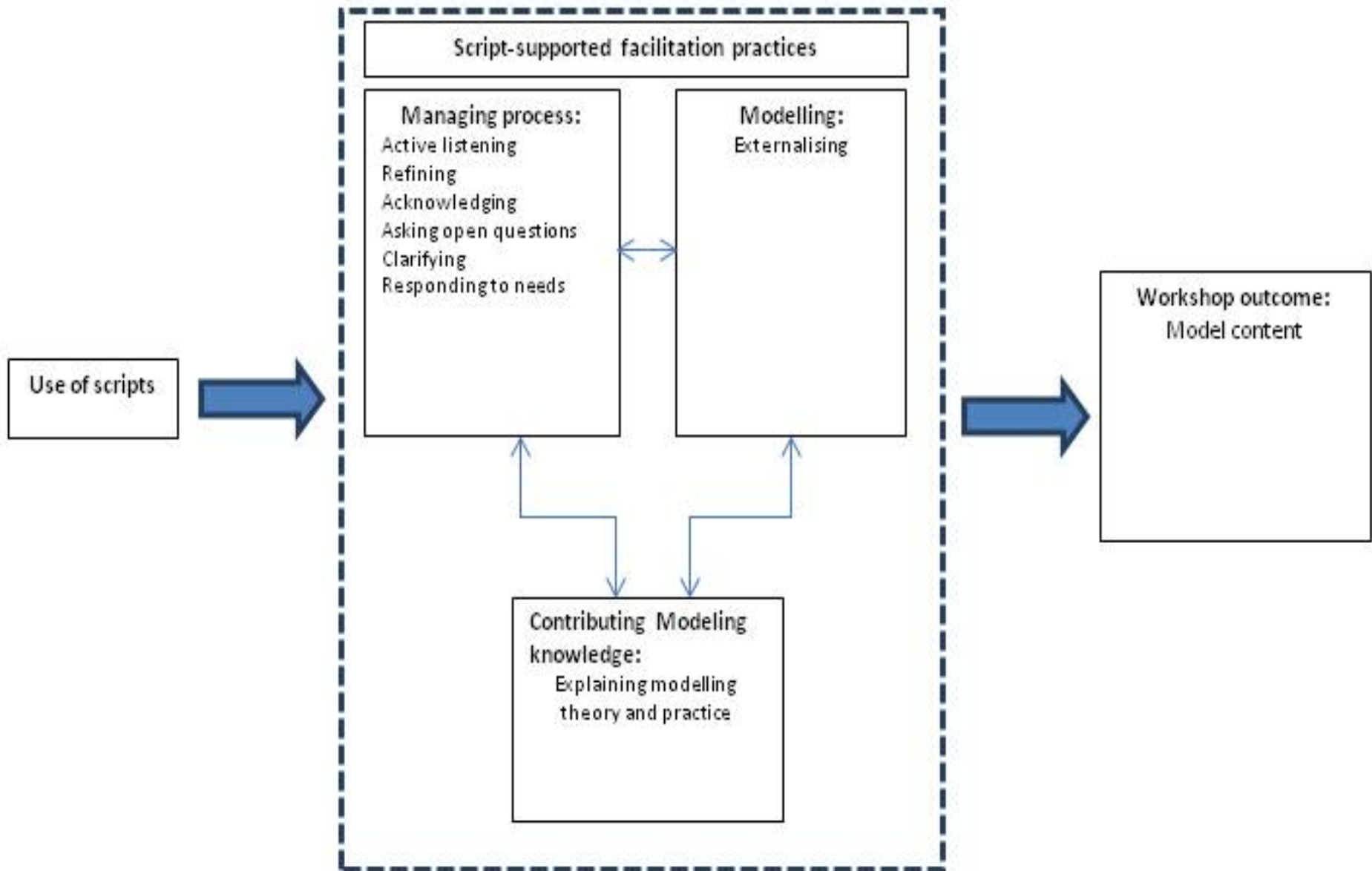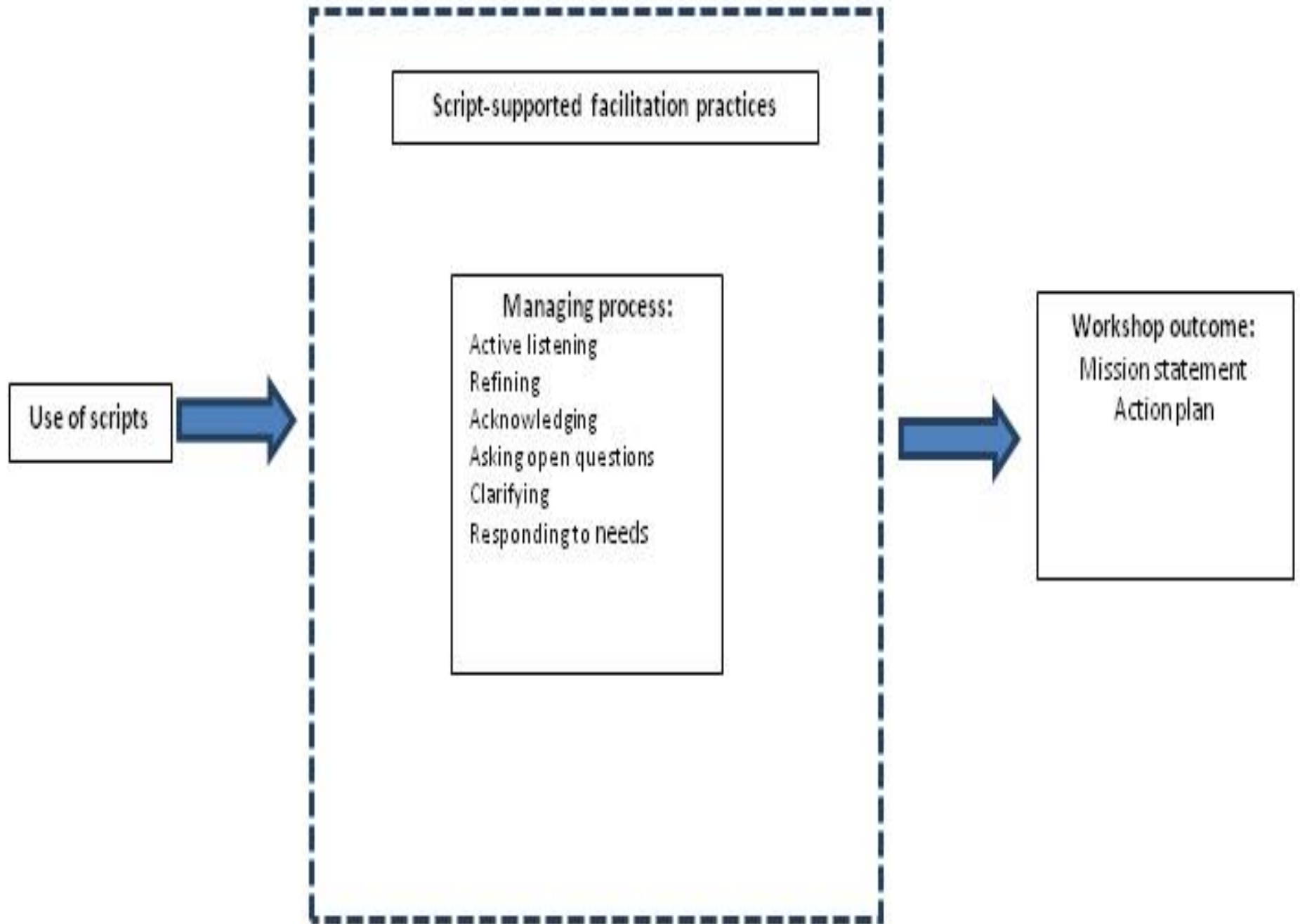
Use of scripts

Script-supported facilitation practices

Managing process:
Active listening
Refining
Acknowledging
Asking open questions
Clarifying
Responding to needs

Modelling:
Externalising

Contributing Modeling knowledge:
Explaining modelling theory and practice

Workshop outcome:
Model content

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│ Use of scripts  │ ──▶
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│   │ Script-supported  facilitation practices │
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│   ┌─────────────────────────────┐            │
│   │      Managing process:      │            │
│   │   Active listening          │            │
│   │   Refining                  │            │
│   │   Acknowledging             │            │
│   │   Asking open questions     │            │
│   │   Clarifying                │            │
│   │   Responding to needs       │            │
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Use of scripts

Script-supported facilitation practices

Managing process:
Active listening
Refining
Acknowledging
Asking open questions
Clarifying
Responding to needs

Workshop outcome:
Mission statement
Action plan

Implications – FM practice

- Expands theory on scripts for managing workshops and achieving outcomes to 'novices' (Ackermann et al 2011; Hovmand et al 2012)

- To become an expert:

  - From a superficial and literal understanding of FM to an articulated, conceptual, and principled understanding of FM.
  - Training -codified knowledge from the scripts is put into practice

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Limitations and future research

- Data is drawn from a single workshop
- Scripts' use depends on
  - FM approach used
  - the problem situation and organisation of concern.
- Scripts during workshop; not on pre-workshop stage
- Future research:
  - different FM approaches, facilitators, contexts
  - scripts in the pre-, post- workshop stages
  - learning trajectory of a novice over time
  - levels of skill, competencies, and expertise required

Thank you!

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