



# *DEMYSTIFYING THE UNSEEN HELMSMAN*

*Towards a competency model for game facilitators*



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Towards a competency model for game facilitators**

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***DEMYSTIFYING THE UNSEEN HELMSMAN  
TOWARDS A COMPETENCY MODEL  
FOR GAME FACILITATORS***

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March 2017



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## **Abstract**

The facilitation of game sessions is an endeavor that requires specific competencies. A game facilitator needs to be an 'unseen helmsman' steering his/her ship of game players clear from rocks and storms without the players realizing. However, the competencies required for game facilitation are somewhat shrouded in mystery. In the past, several competency models have been developed for facilitators of generic group sessions. However, among facilitators of simulation game it is assumed that facilitating gaming sessions requires additional competencies. Currently, there exists no model that comprehensively outlines the competencies needed to facilitate a simulation game in particular. In our study we determined what makes facilitating a simulation game stand out with respect to generic group facilitation. Then we performed both a top-down literature review and a bottom-up, participatory study to propose a competency model for game facilitation. In the former we investigated several existing competency models for generic group facilitation. In the latter, we guided a group of game facilitation experts through a four-step process to identify competencies. First we asked the group to identify skills, knowledge, and attitudes that are needed to facilitate a simulation game. Second, the results were analyzed by another group of experts and submitted to, third, a hierarchical cluster analysis and, fourth, a 'labelling game' to identify competencies. We compared the outcomes of the top-down and bottom-up studies to draw conclusions. We found that although some competencies from the literature on generic group facilitation are valuable for game facilitation as well, others are not applicable in a game facilitation context and still others are lacking in existing models.

## ***Keywords***

Games, simulation, facilitation, competency model, small groups, facilitation skills





# 1

## Introduction

Game facilitators are of great importance for the successful execution of a game (see e.g. Greenblat & Duke, 1981; Steinwachs, 1992; Leigh, 2003; Kato, 2010), yet there exist no clear, and widely endorsed guidelines to select and train game facilitators. For instance, in 1998, Leigh & Spindler made the following observation: “While there is a great deal of material concerning the development of facilitation skills in general, [...] less specific information is available on ways to apply such knowledge to game/simulation” (Leigh & Spindler, 1998:389). A decade later, Van Kessel & Datema (2008) reported that a list of requirements for game facilitators was still lacking. Therefore, they themselves studied facilitation styles which enabled them to be more critical in future when selecting facilitators for their games. In 2010 Kriz addressed the issue of game facilitation from a systemic-constructivist perspective. He described various quality aspects of game facilitation and described three approaches for facilitation. Further, he elaborated several aspects of facilitation, such as the phases of the debriefing process and debriefing methods. However important and constructive this publication was and still is, it does not yet give systematic insight in the desired or required qualities for a game facilitator. This short overview shows that knowledge about what a game facilitators need in order to perform successfully, is still lacking.

A successful method for providing insight into the effective performance of a job is competency modelling (cf. Knowles, 1980; Spencer and Spencer, 1993; Campion et al., 2011). Competency models identify the knowledge, skills, and attitudes required for job performance and improvement. Several competency models for general types of group facilitation have been developed (see, e.g., Baker and Fraser, 2005; Stewart 2006). However, there exist no competency models for game facilitators in particular. It is the conviction of many game facilitators that the competencies for generic group facilitators do not cover all competencies required for facilitating a game. Therefore, the aim of this paper is to propose a first, tentative competency model to improve the selection and training of game facilitators.

Boulter, Dalziel & Hill (1998) have described the process of defining competency models, involving six stages:

1. **Performance criteria** Defining the criteria for superior performance in the role
2. **Criterion sample** Choosing a sample of people performing the role for data collection
3. **Data collection** Collecting sample data about behaviors that lead to success
4. **Data analysis** Developing hypotheses about the competencies of outstanding performers and how these competencies work together to produce desired results
5. **Validation** Validating the results of data collection and analysis
6. **Application** Applying the competency models in human resource activities, as needed.

Although they have developed their process in the context of organizations and job competencies, we believe that this process is rather generic, and that it is also applicable to the process of making a competency model for game facilitators.

In our research we have studied in which ways game facilitation differs from general group facilitation. We used the method of competency modelling to propose a model for game facilitator competencies. This method comprised literature reviews of existing models, the use of questionnaires and workshops to elicit a broad set of competencies from experts, and workshops and interviews to cluster the initial set of competencies. Finally, we validated our model through interviews with a group of game facilitation experts.

The outline of the paper is as follows. In section 2, we discuss the facilitation of simulation games and outline the similarities and dissimilarities with other types of group facilitation. Thereafter, section 3 presents existing competency models of generic group facilitation; this section is concluded with a reflection on their applicability to games facilitation. In section 4, we present our competency model for game facilitators which will be validated in section 5. Conclusions will be drawn in section 6 and the opportunities of using the model for selection and training of game facilitators will be discussed.

# 2

## Facilitation of simulation games

Before we can elaborate what is special about facilitating simulation games and what competencies are needed for that, we first have to clarify what is so special about simulation games. In this study we confine ourselves to a specific class of simulation games: we consider those simulation games for learning, research, and design in which participants perform in direct interaction with each other, the facilitator, and possibly computer-simulated systems and players. The study is about simulation games with an external objective, such as improving the cooperation in a group, acquiring skills, or exploring alternative solutions for a problem. It is also good to point out that in this context a simulation game almost never is a stand-alone activity, but that it is always imbedded in some larger project or process<sup>1</sup>.

Using simulation games in order to teach or train participants or to give them insight or experience with some phenomenon has two characteristics that in combination makes this a unique instrument.

In the first place, working with simulation games implies that the learners and trainees (we will call them participants from now on) do not work with the real world, but they work with a model of that world. This characteristic refers to the ‘simulation’ part of the name and is also found in other model-based learning environments such as group model building (Vennix, 1999).

The second characteristic of simulation games, linked to the ‘games’ part of the name, is that the participants do not work **with** the model, but they work **within** the model. Participants are introduced in a scenario, get a role and assignments, and they have to perform in this simulated environment. While doing so, they acquire an inside perspective on the simulated situation. Later, in the debriefing phase, the so-called ‘embodied experiences’ (Gee, 2007; Klabbers, 2009; Kortmann et al., 2014) in the simulated environment are transferred to the real-life situation of the participants. That is where the actual learning about the real life situation take place.

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<sup>1</sup> In this article we use the term game facilitators as a shortened version of ‘simulation game facilitators’. Unless explicitly mentioned the assertions made in this article only pertain to the persons who facilitate simulation games as defined here.

The learning process in model-based learning situations can be illustrated as is done in Figure 1 (Peters et al, 1998). The arrow at the left side refers to the design process, the transformation of the real-life situation into a model, being an abstract and reduced version of the real-life situation. In the case of simulation games this model is shaped by using the 'language of gaming', built up out of elements like scenario, events, rules, roles, et cetera. (In contrast: a mathematical model is also an abstract and reduced version of reality, but it is shaped by using the language of mathematics: variables and functions). The label 'applying the game' refers to playing the game; participants perform their role in the game and while doing so they experience and learn about this simulated situation. In the type of games, we focus on in our study game play is relatively open and has no pre-defined outcomes. (in Peters & Vissers, 2004, this type of games is referred to as games with a 'development / exploration' purpose). The main concern of a game facilitator is that the players go through a meaningful game experience, not the exact contents of the experience. After the game has been played, the lessons for the real life situation have to be formulated based on the experiences the participants had during the game. This is the debriefing phase, represented by the arrow at the right.

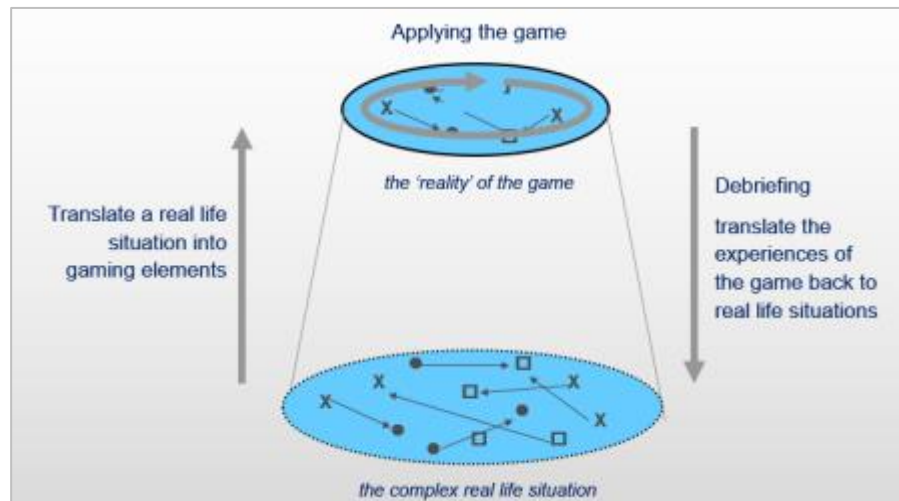


Figure 1 The process of designing and applying simulation games for complex problems (Peters et al., 1998)

## **2.1 Phases in using simulation games**

What are the implications of using a simulation game for the facilitator? In using a simulation game, we can distinguish three different phases, in which the facilitator has different tasks and a different role (see also Kriz, 2010).

### Phase 1 - The briefing

The facilitator explains to the participants the game they are going to play. This implies that the scenario is explained, the roles and assignments are clarified, and the mechanism of the game are elucidated. But it is not just a matter of explaining. In this phase the facilitator must bring the participants into the scenario and their roles, so that they start thinking from inside the modeled situation (instead of about that model).

### Phase 2 - The game execution

The participants (or players as they can be seen now) perform in the created situation, they work on their assignments, interact, make decisions, and do whatever tasks they have to do. The facilitator overviews the process, takes care that the participants are confronted with the appropriate problems (by issuing events), regulates the speed and complexity of the game (if necessary) and gives feedback in between rounds on the performance of the players in the game. In many simulation games the facilitator has an additional task. Often the facilitator (or one of the facilitators) plays also a (simulated) role in the game, e.g. the role of bank.

### Phase 3 - the debriefing phase

The facilitator takes care that the participants get out of their role (cooling down, dehoaxing), and guides the process of translating the experiences from the game to the real life situation. In this phase it is not the role of the facilitator to 'teach' the lessons that should be learned, but to enable (facilitate) the participants to draw their own conclusions and formulate their own lessons for the real life situation. The responsibility for the learning and the learning process is in the hand of the participants, and the facilitator creates a situation and atmosphere in which the participants can learn optimally from their experiences in the game.

To be complete we might distinguish an extra phase, preceding these three phases:

### Phase 0 - the intake and preparation phase

In addition to the tasks in this phase that are common to all situations where a teaching or training tool is deployed, working with simulation games requires a few extra tasks for the facilitator. One can think of assessing the appropriateness of a simulation game for a specific purpose (i.e. is this the correct metaphor), making adjustments in the simulation game (e.g.

related to the number of participants), managing the expectancies of the client or the participants. These activities require specific knowledge and skills of the facilitator, too.

To conclude, we can say that the facilitator of a simulation game has to perform several roles, partially consecutive partially simultaneously. Having to perform these roles and switching between them requires a specific set of competencies. The key characteristic of a game facilitator that distinguishes him/her from other types of small-group facilitators is the art of standing back. Also, a game facilitator should exercise restraint in determining where the game is headed – only in extreme cases should a game facilitator intervene, for instance when the game play is threatened to be disrupted due to fights, emotional breakdowns, etc. A game facilitator is an unseen helmsman who steers his/her ship of players clear from rocks and storms without the players noticing.

# 3

## **Roles and competencies of general group facilitators**

Our enquiry into the competencies of good game facilitators consisted of a top-down literature review and a bottom-up, participatory approach to identify important competencies. Our literature review revealed that there exist several role descriptions and competency models for more general group facilitators. The question remains to what extent those models apply to facilitators of simulation games (depending on the corresponding role description). Below we present the results of our literature review and analyze their applicability to games.

We reviewed prominent publications in the field of small groups facilitation (Baker & Fraser, 2005; Stewart, 2006; Kolb, Jin & Song, 2008), facilitation of learning (Heron, 1999; Thornton & Yoong, 2011), Group Support System (GSS) facilitation (Clawson & Bostrom, 1993, 1996; Niederman, Beise & Beranek, 1996; Ackermann, 1996; Dickson et al, 1996; De Vreede, Niederman & Paarlberg, 2002; Den Hengst & Adkins, 2005; Adla, Zarate & Soubie, 2011), and group model-building (Vennix, 1999) to identify competencies and competency models of general group facilitators. The selection of articles was made as follows. First, we consulted experts in the various fields mentioned and asked them to name relevant publications about facilitator competencies. Second, we searched the literature database Scopus by Sciverse. We used the queries “facilitator” and “competency model” in the article title, abstract, and keywords. From the query results we selected the relevant publications: articles on the roles of human facilitators or facilitation support systems for small groups in workshop settings. Articles on therapeutic group facilitation or publication where “facilitator” referred to drivers or chemical substances were left out. Third, our initial list of publications, obtained from experts and literature search, was extended by looking up relevant references in the publications. The resulting list of 23 publications will be discussed in more detail below by field of expertise. For all sources we summarized the roles and competencies of facilitators that were identified in them. Subsequently, we surmise how each finding may apply to a competency model of simulation games.

### **3.1 Small group facilitation**

The International Association of Facilitators (IAF) published a handbook on group facilitation in which, amongst other content, they defined a set of core facilitator competencies (Baker &

Fraser, 2005). The IAF sees facilitators as persons that improve a group's effectiveness. They are able to:

- Create collaborative client relationships
- Plan appropriate group processes
- Create and sustain a participatory environment
- Guide a group to appropriate and useful outcomes
- Build and maintain professional knowledge
- Model positive professional attitude.

Each of the items on the list above represents a competency set. Each set was elaborated into specific competencies and sub-competencies by the IAF. A full description can be found in Appendix A.

Furthermore, Stewart (2006) and Kolb et al. (2008) developed two competency models of small group workshop facilitation. Like the IAF, Stewart and Kolb et al. view a facilitator as a person who supports groups in improving their performance and in reaching a goal. In addition, Stewart follows Schwarz (1994) in distinguishing between two facilitation roles: 'basic facilitation' and 'group developmental facilitation'. In 'basic facilitation' groups expect the facilitator to guide the group and be in control of the process. In 'group developmental facilitation', the group learns how to manage the process and how to correct themselves when the process does not lead to satisfactory outcomes. Stewart identified the following sets of competencies:

- Interpersonal competencies (communication skills)
- Interpersonal competencies (further skills)
- Management process competencies
- Understanding context competencies
- Personal characteristics.

As in the case of the IAF, Stewart decomposed the sets of competencies above into specific competencies. Also she had them scored and ranked on importance by a panel of 101 facilitators and clients of facilitation. A full list of competencies identified by Stewart, including the scores, can be found in Appendix B.

Kolb et al. (2008) grounded their work in the theory of small groups which describes group processes along two dimensions: people in groups 1) fulfill tasks and 2) maintain relationships



(see e.g. Kelly & Thibaut, 1954). Accordingly, Kolb et al. identified a set of facilitator competencies along each of these two dimensions (as shown in figure 2):

- Task-supporting competencies
- Relationship or climate-supporting competencies.

In addition, they identified three more competency sets that support the sets above.

- Communication competencies
- Organization competencies
- Professional ethics.

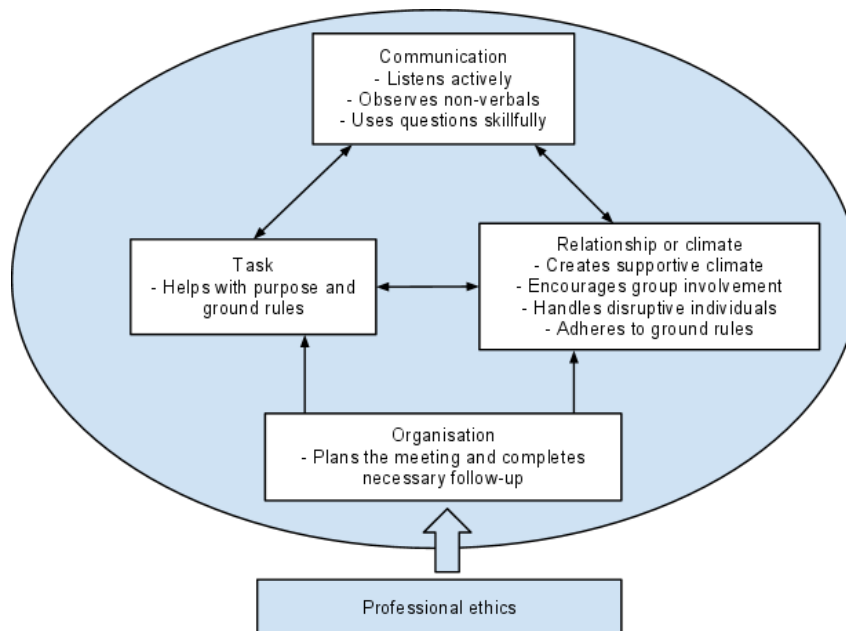


Figure 2 A competency model for small group facilitators (Kolb et al, 2008).

Kolb et al. explicitly define the facilitator's task to include management of the group process which contrasts Schwarz's idea of 'group developmental facilitation' and our notion of the task of game facilitators.

### 3.2 Facilitation of learning

John Heron defines a facilitator as “a person who has the role of empowering participants to learn in an experiential group” (Heron, 1999, p. 1). He identified six dimensions of facilitation, basic issues relating to the ways the learning process can be influenced by the facilitator:

- **Planning** enabling the group to achieve their learning objectives
- **Meaning** sense making of experiences and actions of the group and its members
- **Confronting** creating awareness of issues that the group avoids or resists to
- **Feeling** managing the emotions and feelings in a group
- **Structuring** selecting and devising methods of learning
- **Valuing** forming a supportive climate empowering the group to achieve objectives

These dimensions may guide us in finding competencies for game facilitators who are also concerned with bringing about experiences in a group. According to Heron, each dimension of learning facilitation will require one or more competencies to effectively influence the learning process. A facilitator may implement each of the six dimensions above in three different ‘modes’:

- **The hierarchical mode** the facilitator leads and directs the group; he takes responsibility
- **The co-operative mode** the facilitator shares responsibility with the group
- **The autonomous mod** the facilitator delegates responsibility to the group

Similarly, Kriz (2010) identifies three approaches to game facilitation:

- **Shaper** the facilitator acts as a leader and provides direction to the group
- **Obstetrician** the facilitator supports the group to “give birth” to their activities
- **Coach** the facilitator observes and supports a group that works independently

It should be noted that there is no single ‘right’ approach (Kriz) or mode to implement a dimension (Heron). The experience, level of maturity, and learning style of the group determine the optimal mode / approach for effective facilitation. For instance, for inexperienced, newly formed groups a hierarchical mode / shaper approach to facilitation is often most effective. In a later stage, a facilitator may switch to a co-operative mode / obstetrician approach. Finally, when the group has gained much experience and has learnt to collaborate smoothly, the autonomous mode / coaching approach is usually most appropriate. Therefore, an experienced learning facilitator is able to influence the learning process in all six dimensions through all three modes.

Thornton & Yoong (2011) studied the role of facilitators in ‘blended action’ learning to support leadership development. The authors define blended action learning as a technology-enabled approach to professional learning that is based on blending communities of practice to jointly work on real-world problems. The interactions between members of the community may either be on-line or face-to-face. Blended action learning requires several essential components to be present, among which a learning facilitator whose role it is:

- to enable learning: in particular to motivate learners to engage in on-line interactions
- to act as a ‘trusted inquisitor’: simultaneously supporting and challenging learners.

The authors identified these roles after studying the roles of (non-blended) action learning facilitators such as listening actively, managing participant emotions, challenging learners and displaying empathy (McGill & Brockbank, 2004) or speeding up the action learning process, encouraging group reflection, and acting as a role model for the questioning and listening skills needed by the group (Marquardt, 2004). Especially acting as a ‘trusted inquisitor’ seems interesting as we see game facilitators as important agents to induce ‘flow’ (Csikszentmihalyi, 1975) in the player group. To induce flow, facilitators should find a balance between challenging

and improving skills of the player group, which seems closely related to the role of ‘trusted inquisitor’ in the case of blended action learning facilitation.

### 3.3 Facilitation in Group Support Systems

In the last decades many publications have appeared about facilitation of Group Support System (GSS) sessions. Clawson, Bostrom & Anson (1993) and Clawson & Bostrom (1993, 1996) empirically identified the dimensions along which the competencies of GSS facilitators can be defined. This work was later followed by Niederman et al. (1996) and Dickson et al. (1996) to identify specific competencies both from the facilitator’s perspective and from the participant’s perspective. De Vreede, Niederman & Paarlberg (2002) compiled from these sources a comprehensive list of facilitation functions that has been ranked with respect to the demand rate of those functions by Den Hengst & Adkins (2005). In recent years, there has been a trend to study how GSS facilitation could be partially automated to support inexperienced facilitators (see e.g. Briggs et al, 2010; Adla, Zarate & Soubie, 2011).

The list of facilitator functions compiled by De Vreede et al (2002) contains six categories of functions (a full list of functions per category can be found in Appendix C):

- Atmosphere management
- Meeting procedures - design
- Content focus
- Meeting procedures - execution
- Technology
- Personality.

The categories shown above are quite similar to the competency sets identified for general group facilitation. One category stands out, viz. technology, due to the nature of GSS. The use of technology, such as computer networks and shared, digital workspaces, is central in GSS. Likewise, many simulation games use computer tools to support the games. In fact, the line of Digital Game-Based Learning (DGBL) is solely concerned with computer-based games (Prensky, 2001). As a consequence of our delineation of the concept simulation games this is beyond the scope of our article.

### 3.4 Model-driven methods for group decision support

To support decision making, stakeholders may engage in facilitated model building sessions such as Group Model Building (GMB; Vennix, 1999), Strategic Options Development and

Analysis (SODA; Ackermann, Eden & Brown, 2005), a combination of multiple approaches (see e.g. Rouwette, Bastings & Blokker, 2011), or some other model-driven method for group decision support. All of these methods rely on model building activities by participants of facilitated workshops. Vennix described under the heading ‘How to be a good facilitator’ a number of characteristics a facilitator should have. Obviously he adopts the perspective of effective processes. He states that three elements are of importance for effective group facilitation: attitudes, skills and a number of tangible tasks (to be performed before, during and after the group model-building session). In his opinion the attitudes are the most important, since the skills will almost automatically follow from the right attitudes. The attitudes and skills he distinguishes are listed in Appendix D.

Ackermann (1996) studied the role of facilitators of such workshops from the perspective of the participants. She identified learning points for facilitators in three stages of the workshop: pre-workshop stage, workshop stage, and the post-workshop stage. The workshop stage was in turn broken down into three sub stages: the introductory stage; the exploration and development stage, and the concluding stage. The learning points, clustered by workshop stage, were summarized in Appendix D.

### **3.5 Synthesis of literature research**

In the previous sections we reviewed selected sources about the facilitation of small groups, learning processes, GSS, and model-driven group decision support. We noticed that many studies into the competencies required for such facilitators have been performed in the past years. We also observed that between the fields of expertise, remarkably few cross references were made. To inform our own empirical study we deemed it worthwhile to synthesize the competency models found in literature. In our synthesis we assume the specific perspective of the game facilitator as described in section 2.

If we look at the four views on facilitation, described above, we see a large overlap between the different sets of desired competencies. It is our expectancy that many of these elements will be part of the competence profile of a game facilitator.

To summarize, we see competencies related to:

- Understanding the context and objectives of the session
- Creating and sustaining a participatory environment
- Understanding and steering group processes
- Communication and interpersonal interactions
- Selecting the most appropriate tools to the session.

A competency that in our view is specifically appealing for game facilitation is the ‘group developmental facilitation’ (Schwarz, 1994; Stewart, 2006). The reason is that also in simulation games facilitators teach the group to manage their own process, for instance by explaining the rules of the game. Players are then encouraged to find the strategies that will optimize their performance in the game (Sitzmann, 2011) with as little guidance given by the facilitator as possible.

The three facilitation modes mentioned by Heron and the three approaches distinguished by Kriz seem also appropriate notions for building a competency model for gaming facilitators. In our general description of the game facilitator (in section 2) we already noted four very different roles (directly related to running a simulation game), that one way or the other are reflected in these modes or approaches. One essential competency that is missing in all the models (or at least not mentioned explicitly) is the capacity to switch smoothly between these roles and modes.

There are also elements that seem not to be appropriate or less relevant for a game facilitator. The most striking for us is ‘Guide a group to appropriate and useful outcomes’ (mentioned by IAF). If this is to be understood as ‘guiding the group to one of a set of predefined outcomes’ it does not fit the objective of many simulation games. Instead, games aim to explore possibly unknown solutions to a problem (cf. Peters & Vissers, 2004). Therefore, having a preconceived notion of the outcomes of the session and guiding the group towards it may hamper the session’s success. Instead, the element ‘Valuing: forming a supportive climate that empowers the group to achieve objectives’ (mentioned by Heron) seem a more appropriate competence for a game facilitator.

One of the functions identified for GSS facilitation, viz. the category of ‘meeting procedures - design’, is a function that in our opinion does not apply to simulation game facilitators. Unlike GSS design, game design is often not the task of a facilitator. Especially when using sophisticated design platforms such as entertainment game design engines (Poelman, Fumarola & Verbraeck, 2009) the design process is performed by a dedicated design team that often does not include the facilitator. Therefore, we expect this function category not to appear in a model of game facilitation competencies. In-depth technology skills are not a necessary basic competency for many simulation game facilitators.

The facilitation competencies and learning points, distinguished by Vennix and Akkerman, also seem to apply to game facilitation. However, there is a difference in the final objective of facilitating decision support sessions and facilitating simulation games: the former focusses on the creation of a tangible product (a group model or a group decision), while the latter category aims at the (individual or collective) learning of the participants.

Personal characteristics are also mentioned (see IAF) or implied (see the professional ethics mentioned by Kolb et al) in the competency sets for facilitators. What we miss is: what specific (combination of) personal characteristics makes a facilitator a good facilitator?

With these notions in mind we started the process of designing an empirically based competency model for game facilitators.

# 4

## Identifying game facilitator competencies from the bottom up

Our literature study in the previous section followed a post-positivist, top-down approach (O’Leary, 2004) to identify game facilitator competencies. In this section we report on a bottom-up, constructivist and participatory follow-up study that we conducted. The reason for doing both a top-down and a bottom-up study is to provide the reader with a multi-perspective account of game facilitation competencies that does justice to the multi-perspective nature of the field.

In a constructivist or participatory research as outlined by Mertens (2005), a set of relevant persons is selected to provide the materials from which the researcher may generate a theory. And although we did not aim for a theory on facilitation, in our opinion this approach is also very useful for generating an empirically grounded competency model for game facilitators.

In our study we followed an approach shown in Figure 3 that comprised four steps to identify the competencies.

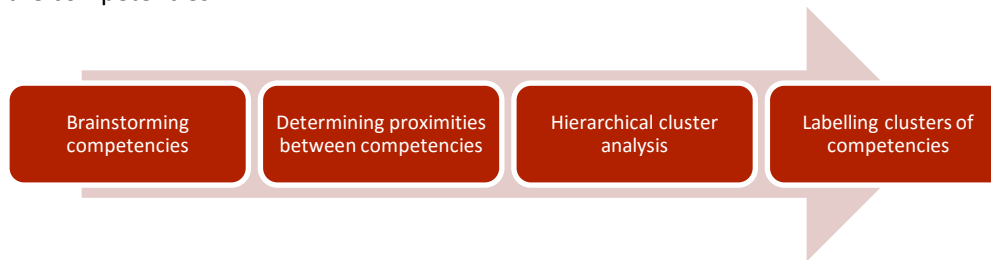


Figure 3 Approach to identifying competencies from the bottom up.

In the first step, we organized a workshop with knowledgeable persons in the field of game facilitation to brainstorm competencies of successful game facilitators. In the second step, we organized another workshop to determine the conceptual proximity between the competencies that had resulted from the brainstorm. We defined the proximity between two competencies as the degree of semantic similarity between them. For this second step we also conducted a series of structured interviews with games researchers to yield a proximity matrix between the brainstormed competencies. In the third step, we used the hierarchical cluster analysis



procedure in SPSS to transform the proximity matrix from step two into a set of competency clusters. Finally, in the fourth step, the clusters of competencies were labelled to yield the final set of competencies in this part of the research.

If we see these steps in the context of the process of competency modelling as described by Boulter *et al.* (1998; see section 1), then the four steps of this research can be seen as a (bottom up and iterative) version of phase two, three and four of the competency modelling process. Instead of explicitly defining criteria for superior performance (the first step of process of Boulter *et al.*), we took the (implicit) expert knowledge of our respondents as a starting point. Below we will describe the four steps and their outcomes in more detail.

#### 4.1 Brainstorming competencies

To brainstorm competencies, we organized a workshop during the ISAGA<sup>2</sup>-2011 conference in Warsaw, Poland. During this workshop over 30 conference participants joined in a structured brainstorm exercise. All participants were (randomly) divided over four groups. Each group was assigned one of the phases of game facilitation identified in Section 2.1: preparation, briefing, execution, and debriefing. Also we handed each group a large sheet of paper that had been divided into four quadrants: 'know', 'able to', 'be', and 'have' (see Figure 4). Each quadrant represented a particular competency area. For instance, 'know' represents the knowledge required for successful game facilitation; 'be' stands for the character traits that a good facilitator should have. These four quadrants cover the three basis components of competencies (see Section 1): knowledge ('know'), skills ('able to') and attitude ('be' and 'have'). The groups were asked to fill the quadrants with appropriate characteristics for an excellent game facilitator, by writing characteristics that came to their mind on sticky notes and position them on the sheet in the appropriate quadrant. After the brainstorm session, all groups were asked to present their results to the other groups and discuss them amongst each other. We expected that peer pressure during the presentations would provide an incentive to the groups to deliver high-quality results.

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<sup>2</sup> ISAGA is the International Simulation And Gaming Association.

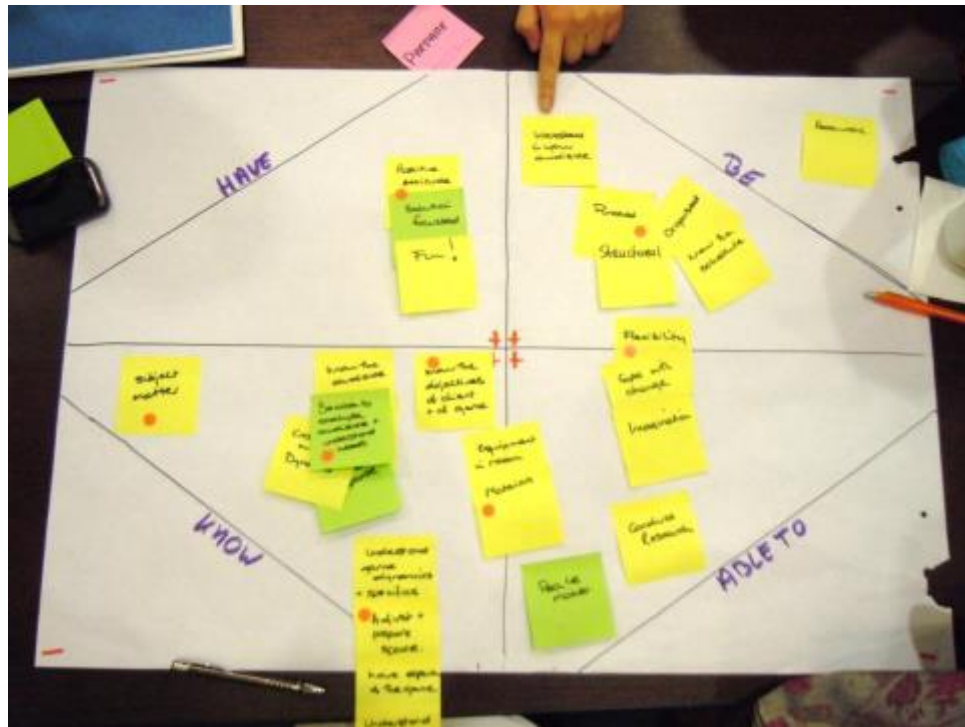


Figure 4 In the first step of the bottom-up study, four groups were asked to brainstorm game facilitator competencies using a sheet of paper that had been divided into four quadrants. Each quadrant represented a competency area: 'know', 'able to', 'be', and 'have'.

The session yielded a total of 127 characteristics (competency elements). To assess the quality of the results we first broke down this total into the numbers of competencies identified for the different facilitation phases and competency areas (Table 1).

Competency area	Facilitation phases				Total per competency area
	Preparation	Briefing	Execution	Debriefing	
<b>Know</b>	12	5	8	9	34
<b>Able to</b>	7	10	18	5	40
<b>Be</b>	7	10	10	6	33
<b>Have</b>	5	4	5	6	20
<b>Total per facilitation phase</b>	31	29	41	26	127

Table 1 Number of competencies resulting from the brainstorm session (per facilitation phase / competency area and grand totals)

Although the numbers of competencies mentioned per facilitation phase and per competency area differ, the table shows that all phases and all areas are sufficiently covered.

## 4.2 Determining proximities

The initial list of 127 competencies identified by our workshop participants in Warsaw was deemed too long to be of any practical use in a competency model for game facilitators. Also, on closer inspection we found many duplications and near-matches of the competencies amongst the groups. In addition, the level of the characteristics mentioned varied, ranging from very specific ('have watch + whistle', obviously referring to some more generic competency) to rather general ('be empathic'). Therefore, to obtain a more concise and balanced picture of the brainstorm results we aimed to reduce the number of competencies to a manageable size.

A commonly used technique for such an aim is (hierarchical) cluster analysis (cf. Hastie, Tibshirani, and Friedman, 2009). This computational method transforms a matrix containing the proximity between elements in a set into clusters of those elements. By proximity we mean the semantic similarity between any two elements in the set. Therefore, in order to apply this method to our set of competencies, we needed to determine the proximities between the individual competencies in the initial list that had resulted from the brainstorm.

To determine the proximities, we developed the following procedure. First we grouped all competencies by competency area. The areas 'Be' and 'Have' were merged into a new group

called 'Attitudes'. Doing so we aligned the areas used in the brainstorm with the three core competency areas commonly used in competency modelling: Attitudes ('Be' and 'Have'), Knowledge ('Know'), and Skills ('Able to'; see also Section 1). The sticky notes with unreadable competencies, duplications, and practical jokes were left out of the analysis. This resulted in a list of 114 competencies (43 Attitudes, 31 Knowledge, and 40 Skills) which were printed on separate cards. We used this set of cards to perform structured interviews with a number of game facilitation experts. In the interviews we first instructed them to study the cards from one competency area and place the cards in front of them on a table. Then we asked them to make groups of cards that shared some semantic similarities. The number of groups was not restricted. The results of one of the grouping exercises are shown in Figure 5. After the grouping exercise we discussed the results with the experts. We asked them why they had grouped the cards in the way they had done and required them to give a label to each group that would cover the meanings of all cards in the group.

We performed these interviews with three groups of experts during a workshop for SagaNet<sup>3</sup> in Utrecht, the Netherlands, and with seven games researchers at Delft University of Technology, Delft, the Netherlands (some of them did the exercise twice for different competency areas). Thus we obtained twelve sets of competency groups (four per competency area) which were then used to calculate a proximity matrix between the competencies in each competency area. To calculate the proximity between any two competencies we counted the number of times that the two competencies were placed in the same group by our experts and divided the total number counted by four (the number of samples per competency area). Doing so, the pairs of competencies that had been placed together in one group by all of our expert received a proximity value of 1, whereas competencies that had never been placed together in one group received a value 0. In this way proximity is operationalized as the relative co-occurrence of two competencies.

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<sup>3</sup> SagaNet is Simulation and gaming Netherlands, the Dutch organization affiliated to ISAGA.

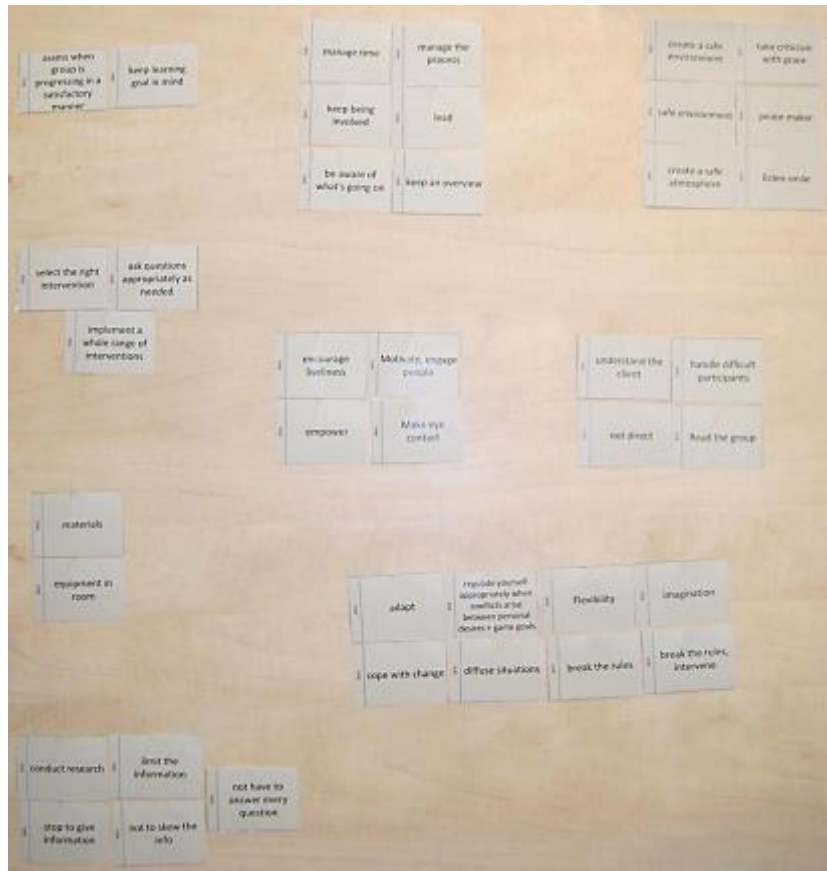


Figure 5 Result of one of the competency grouping exercises.

### 4.3 Hierarchical cluster analysis

We used the statistical package SPSS to perform a hierarchical cluster analysis on the three proximity matrices that were calculated in the previous step<sup>4</sup>. Figure 6 shows the results of the analysis for the competency area 'Knowledge' as an example. We discuss this result to explain how the final clusters were determined. The results in the other competency areas were treated in the same way.

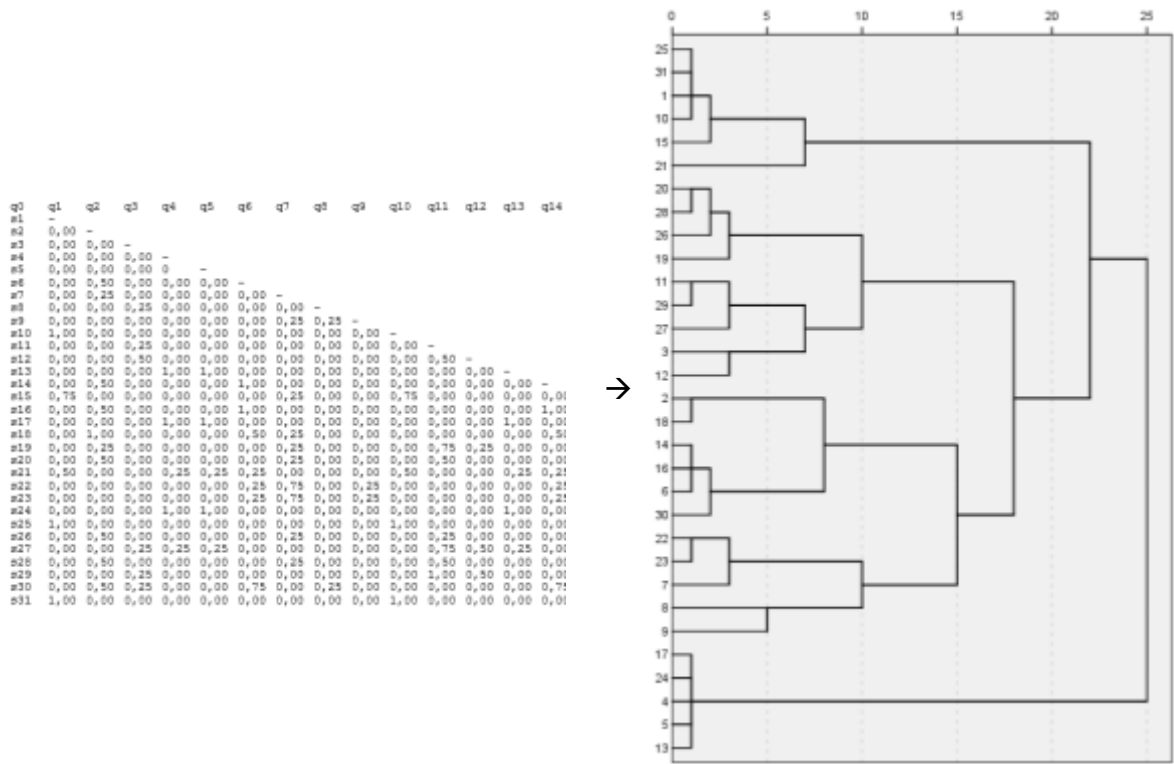


Figure 6 From similarity matrix (partly shown) to the results of a hierarchical cluster analysis of the competencies pertaining to Knowledge.

<sup>4</sup> Based on Euclidean distance, average linkage method

In the figure, the identifiers of all 31 competencies in the knowledge area are shown on the vertical axis. On the horizontal axis we drew a parameter used by the clustering algorithm that is a measure of tolerated dissimilarity. When this parameter takes its maximal value (25) the algorithm regards all competencies as belonging to the same cluster. In contrast, when this parameter has a value 0 all competencies are regarded as belonging to different clusters. With increasing values of this parameter the cluster size will increase while the number of clusters will decrease. In our analysis of all three competency areas we used a value 13 for this parameter. This value was chosen to obtain a manageable number of clusters per competency area: seven clusters in the Attitudes area, six clusters in the Knowledge area, and eight clusters in the Skills area. The clusters can be found in Appendix E.

#### **4.4 Labelling clusters: the Crowdlabelling game**

To arrive at a final, manageable set of competencies we organized a final workshop for 28 participants of the ISAGA-2012 conference in Cluj-Napoca, Romania. For this workshop we developed a small game called Crowdlabelling which was inspired by the ESP game for labelling images (Von Ahn & Dabbish, 2004). The aim of the game was to find common denominators or labels for the clusters of competencies that had resulted from the hierarchical clustering described above.

In the Crowdlabelling game our group of 28 players was seated in a conference room and was handed an answer sheet. After instruction they were presented a small number of competencies for which they were requested to devise and write down a common denominator or label on their answer sheet. This label should cover the meaning of all competencies that were shown as much as possible. More specifically, they were instructed to think of a label that as many other participants would think of as well. Players were not allowed to confer. The scoring scheme in the game was as follows: players that had written down the label that appeared most frequently in the results received two points. The second most frequent label was worth one point. Therefore, we stimulated players to find labels for sets of competencies that would be meaningful to as many other people as well. The game was repeated for each cluster that had resulted from the hierarchical clustering analysis described above. The results can be found in Table 2 (Attitudes), Table 3 (Knowledge), and Table 4 (Skills).

<i>Attitude</i>			
Cluster	# comp <sup>5</sup> .	Most frequent label (#)	Second most frequent label (#)
1	12	Organized (6)	Structured (4), Preparation (4)
2	3	Appropriate clothing (3)	Presentable (2), professional (2)
3	9	Objective (11)	Open minded (7)
4	10	Open minded (4)	Positive (3), friendly (3), assertive (3)
5	2	Objective (8)	Indifferent (2), Keeping distance (2)
6	6	Relaxed (8), Flexible (8)	-
7	1	-	-

Table 2 Results of the Crowdlabelling game for the competency area Attitudes. The numbers between brackets indicate the numbers of participants that have assigned this label. The seventh cluster was not presented to the participants since it contained only one competency.

<i>Knowledge</i>			
Cluster	# comp <sup>6</sup> .	Most frequent label (#)	Second most frequent label (#)
1	4	Rules of the game (6)	Briefing (3), Game design (3)
2	5	Experience with the game (5)	Debriefing (5)
3	6	Goals of the game (7)	Educational knowledge (2), knowledge about clients (2)
4	5	Subject matter knowledge (10)	Flexibility (2)
5	5	Game participants (12)	Group dynamics (3)
6	6	Logistics (5)	Practical knowledge (4)

<sup>5</sup> The competencies that were shown can be found in appendix E.

<sup>6</sup> The competencies that were shown can be found in appendix E.



Table 3 Results of the Crowdlabelling game for the competency area Knowledge. The numbers between brackets indicate the numbers of participants that have assigned this label.

<i>Skills</i>			
Cluster	# comp <sup>7</sup> .	Most frequent label (#)	Second most frequent label (#)
1	9	Flexibility (4)	(group) management (2)
2	4	Organized (3)	Prepared (2)
3	3	Flexibility (5)	Adaptability (2)
4	2	(non-verbal) communication (7)	Empathic (6)
5	6	Flexibility (10)	Adaptability (4)
6	7	Management (12)	Focused (3)
7	4	Safety (10)	-
8	5	Empowerment (4)	Leadership (3)

Table 4 Results of the Crowdlabelling game for the competency area Skills. The numbers between brackets indicate the numbers of participants that have assigned this label.

From the results we derived that for some clusters there existed rather great consensus amongst a large group of players. For instance, to cluster 5 in the Knowledge area (Table 3) twelve players out of twenty-eight assigned the label 'Game participants'. Therefore, we may conclude that knowledge about the game participants was thought of by almost half the players as a proper label to cover the meaning of the competencies in the cluster. In contrast, we found that for other clusters much less consensus existed. Apparently, some clusters are clearer than others. Moreover, the results tell us that, although players were well able to assign labels to attitudes and knowledge, they had more difficulties in labelling skills. What we mean by this is that most labels in Table 4 do not represent skills. Also we see many duplications. The label 'Flexibility', for instance, appears four times in the tables above. This label represents an attitude, not a skill. We expect that the reason for this is the fact that the game was rather difficult and lasted too long for many participants. The clusters from the competency area Skills were presented in the final part of the game and probably, many players were not motivated

<sup>7</sup> The competencies that were shown can be found in appendix E.

well enough anymore to perform as well as in the beginning of the game. Therefore, we used the results of the Crowdlabelling game as a starting point for assigning the actual labels to the competencies, but allowed ourselves to make modifications where necessary. These modifications were based on the interviews with TU Delft games researchers and the SagaNet colleagues who also had provided labels while doing the grouping exercises (see section 4.2), as well as our own judgment. The following table shows the results of our bottom-up study.

Attitudes	Knowledge	Skills
<ul style="list-style-type: none"><li>• Organized</li><li>• Professional</li><li>• Player-oriented</li><li>• Open-minded</li><li>• Objective</li><li>• Adaptive</li><li>• Wanting to radiate trust</li></ul>	<ul style="list-style-type: none"><li>• Game-specific knowledge</li><li>• Procedural game facilitation knowledge</li><li>• Game session related knowledge</li><li>• Domain knowledge</li><li>• Knowledge about players</li><li>• Practical/logistic knowledge</li></ul>	<ul style="list-style-type: none"><li>• To intervene in groups</li><li>• Technical skills</li><li>• To functionally stretch game rules</li><li>• To level with a group</li><li>• To respond flexibly to a group</li><li>• Process management skills</li><li>• To create an appropriate atmosphere</li><li>• Empowering skills</li></ul>

Table 5 The resulting competencies from the bottom-up, participatory study.



# 5

## Comparing the two approaches

To arrive at a final set of competencies for game facilitators we compared the results of our top-down literature study to our bottom-up participatory study.

### 5.1 Comparison to small-group facilitator competencies

When comparing our bottom-up results to the competencies identified by the IAF (Baker and Fraser, 2005), Stewart (2006) and Kolb et al. (2008) for small-group facilitators we observed several similarities. The most important similarities are:

- Facilitators are able to work collaboratively with the participants and stimulate them to participate in the process
- Facilitators provide some structure for groups to support their work or game
- Facilitators have excellent interpersonal and process management competencies
- Facilitators understand the context in which the group work or game takes place

The main dissimilarities that we found are:

- A game is a very specific instrument to facilitate small groups. Game facilitators need specific knowledge and skills to use this instrument that are not necessary for small-group facilitators that use more general-purpose instruments.
- When games are used as an exploratory instrument game facilitators need not be as goal-oriented as small-group facilitators. Instead, they need to respond flexibly to a group and the developments in a game even if that would mean dropping some of the original goals. In fact, we feel that game facilitators should have more of a 'standing-back' attitude than small-group facilitators in general: the players decide where to go and at what pace.
- Game facilitators should be even better able to 'suspend the disbelief' of participants: when players enter a game they assume a role and behave

according to the rules of the game. In order for this to work well, the game facilitator should be more sensitive to creating an appropriate atmosphere than general small-group facilitators.

## **5.2 Comparison to learning facilitator competencies**

Our bottom-up results bear much resemblance to the competencies for facilitation of learning according to Heron (1999) and Thornton and Yoong (2011). In particular, both types of facilitators should:

- Motivate participants to explore, discover, get engaged, and learn. For this, facilitators need detailed knowledge about the participants, their learning preferences, and the ways to engage different types of participants.
- Radiate trust in order to be able to use both ‘carrot and stick’: sometimes a facilitator should seduce and comfort participants to reach a goal; sometimes a facilitator should confront the participants with their negative sides, thus showing them the necessity to improve. For the latter approach to work, trust is pivotal.

The most important dissimilarities that we found are:

- Games can serve more aims than just learning. This fact calls for additional competencies for game facilitators than those needed for facilitating learning. For instance, when games are used to support the development of public policy, game facilitators should have multi-disciplinary knowledge about the policy domain (political, economic, technical, social, etc.).
- Heron proposes that in some cases it is appropriate that the learning facilitator directs the group and takes responsibility for the process. Although in games a facilitator may seem to act as a leader (as in the ‘shaper’ approach mentioned by Kriz (2010)), we feel that he or she should never direct the group or take responsibility for the process. Instead, this should be the task of the game design. A game facilitator should stand back and allow the players to find their own way, even if this would initially lead to confusion and disorder: the experience of self-organizing a process by a group of players is very powerful and good game designs will exploit this feature.

### 5.3 Comparison to GSS facilitator competencies

The comparison of our results to the literature on GSS facilitation yielded findings very similar to those in the case of small-group facilitation. In general, GSS sessions need much stricter facilitation than game sessions. The reason is that games provide a lot of structure by themselves and, if designed well, have inherent features to keep participants engaged. This means that game facilitators need to put significant effort into guiding a group to become part of a game, but, once this has been done, will be able to facilitate much more loosely than many GSS facilitators. Again, game facilitators will need to be able to suspend disbelief of players. For a start they will need to believe themselves in the games they facilitate to accomplish this.

### 5.4 Comparison to facilitator competencies for model-driven group decision support

As we expected, many of the attitudes and skills that are considered important for facilitating group decision support processes are also present in the competencies we have derived from our bottom-up approach; this holds especially for process related competencies. Both Vennix and Akkerman point at the fact that the three phases in the facilitation process (before, during and after) require a different set of competencies, at least a different weight for the distinguished attitudes, knowledge and skills. In section 1 we stressed that this is also the case for game facilitation. The difference between the competency models by Vennix and Akkerman and our bottom-up model is the fact that we have explicitly distinguished the category of knowledge (of the problem context as well as of the game used), while this remains implicit in the former models.



# 6

## Conclusions and discussion

In the beginning of this paper we noticed that, although game facilitation is of great importance to the success of simulation games, there exist no clear guidelines to select and train game facilitators. Through top-down and bottom-up exploratory research we identified a number of competencies that are of importance for good facilitation of simulation games. Below we draw conclusions from our research. Thereafter, we discuss our work and propose ways for using the results and following up on our study.

### 6.1 Our characterization of game facilitation

This paper focused on the facilitation of simulation games for learning, research, and design (as defined in section 2). This type of games usually has no predefined outcome; the goals for learning, research, and design are abstract rather than concrete. Facilitating this type of game sessions was characterized as supporting groups to collectively construct meaning to events that they encounter during the game session. We emphasize that in this delineation, the ultimate aim of a game facilitator is not to reach one of a set of predefined game outcomes. Instead, it is to create a supportive environment for players to experience and explore even if that exploration does not fit in the game designer's original frame of reference.

Our analysis showed that the activities of a game facilitator comprise four phases: the preparation phase, the briefing phase, the game execution phase, and the debriefing phase. We conclude that in every phase, a game facilitator will need a different set of different competencies to perform well (although there is a substantial overlap between these sets). During the game execution phase, a game facilitator may adopt different roles to respond well to the styles of different types of participant groups. We conclude that for every role different competencies are likely to be important for successful game facilitation.

### 6.2 Insights from other types of group facilitation

Many handbooks, guidelines, competency models, and so forth, have been compiled about facilitating groups other than groups of game players. These sources provide many important insights into the competencies needed for the facilitation of games. From our literature review we arrived at five categories of competencies:



1. understanding the context and objectives of the session
2. creating and sustaining a participatory environment
3. understanding and guiding group processes
4. communication and other interpersonal interactions
5. selecting the most appropriate tools for the session.

These categories are related to the different phases of facilitating group sessions (before, during, and after the session). Our analysis showed that these phases resemble the phases identified for game facilitation very much. Therefore, we conclude that literature on generic group facilitation provides us with different categories of competencies for the distinct phases of game facilitation.

Also, as in the case of game facilitation, literature shows that generic group facilitators may play different roles to respond optimally to different styles of groups. Every role comes with a different set of competencies to play it out effectively. This finding confirms our presumption that the different roles for game facilitation require different competencies as well.

The categories shown above contain many individual competencies, such as 'group developmental facilitation' (Schwarz, 1994; Stewart, 2006) which refers to the capacity to empower groups to think critically and constructively about the events they encounter during the session. We conclude that competencies like these are also of importance to our interpretation of game facilitation. It was found, however, that many of the consulted authors do not consider this capacity to be of prime importance. This leads to the conclusion that we need to be very careful to adopt the suitable competencies from the literature on other types of group facilitation. Not all of them apply to game facilitation as we interpret it here.

Finally, we noticed that the sources we consulted had been generally written within the boundaries of one sub-discipline, such as the facilitation of learning processes or the facilitation of group decision support sessions. We found hardly any cross-references between these disciplines, which means that they may benefit from each other's knowledge on group facilitation in the same way as we do here.

### **6.3 Game facilitator competencies**

From our bottom-up, empirical research we conclude that our sample of experts considered the competencies shown in Table 5 to be important to facilitating game sessions. We compared these results to the insights obtained from the literature on other types of group facilitation. From this we conclude that, although many competencies for facilitating generic group sessions

also apply to game sessions as we interpreted them, there exist some striking dissimilarities which will be discussed below.

**Playing within a model requires other facilitator competencies than playing with a model**

As was delineated in Section 2, gaming simulations as we have delineated them allow participants to play *within* a model. In contrast, in other types of group sessions participants may play *with* a model. Using a model in the gaming sense properly and effectively implies the smooth transition from the real world into the simulated world and back again. Therefore, gaming facilitators should be capable to bring the participants into the simulated world, to help or challenge them perform in that environment, and to get them out of the simulated world back to the real life situation. And this requires that game facilitators be able to operate in the real world situations as well as in the simulated environment (sometimes by playing a role in the game), and in addition that they are able to make an adequate translation between these two 'realities'. They should be aware that the learning process is not about the simulated model itself, but that this model is a means to learn about the real life situation. The learning process of participants is guided by a game facilitator from within the simulated model towards the real life situation. Therefore, the capacity to switch roles is important for good facilitation of games. For instance, a good facilitator will be able to switch between the roles of non-player character and facilitator during game play. Also, he or she should be able to adopt different facilitator roles or styles to respond effectively to different types of groups.

**Full comprehension of and respect for the game instrument is of vital importance**

In game sessions the use of an instrument (*i.e.*, a game) plays a more prominent role than in most other types of group facilitation in which more generic instruments such as a flip board, sticky notes or computer-based support systems are used. A well-designed game takes away some of the tasks of a facilitator: the game's narrative structure provides the participants with goals; the game rules and materials provide them the means to reach those goals. From our analysis we conclude that, to be able to monitor the session, to optimally use the game's features, and to intervene at the right moments, a game facilitator will need to comprehend his/her session instrument much better than other facilitators need to. In addition to knowledge of the advantages and limitations of simulation games in general, a thorough understanding of elements and mechanics of the specific game is essential. This understanding, referred to by the terms structural and the process validity (Peters et al, 1998), is indispensable for making correct translations to the real life situation. Besides comprehension of the game, respect for the game is important to promote game success. This means that a facilitator should

be able to stand back and ‘let the game do its work’. It takes a lot of trust for the facilitator to do so and it requires the ability to delegate control.

### **Translating between the game and reality is essential for transfer**

Since games are based on an abstraction and reduction from the real world (often shaped in a metaphor), a facilitator needs to be able to translate events and insights from the real world to the game and back again. Doing so will enable the players to relate their understanding of the game world to the real world and therefore to transfer their learning to their professional or personal environment. We emphasize that this ability is not only important for games that were primarily designed for the purpose of learning. Other games as well that, for instance, support participatory research, design, and decision taking should be facilitated such that participants will transfer possible learning outcomes to their reference system easily.

## **6.4 Discussion**

Our research has not resulted in a ready-to-use competency model for selecting and training game facilitators. This is due to certain limitations of our work. For instance, we have employed convenience samples of facilitation experts in the subsequent stages of our empirical research instead of carefully selected, heterogeneous and representative samples. Also, we only used explicit methods to elicit competencies, *i.e.*, we asked our experts explicitly to write down competencies. We did not use implicit methods such as observing facilitators in action to identify competencies that these facilitators may not have been explicitly aware of. As a result of this limitation of our research methods, we may have missed some important competencies at a sub-conscious level or competencies that are self-evident in the view of our consulted experts.

However, we believe our work is nevertheless a worthwhile step towards the formulation of criteria for the selection and professionalization of game facilitators. We have provided a frame for building a competency model. The elements of this frame may be ordered along several dimensions:

- the competency areas: what does a game facilitators need to know (‘knowledge’), to be able to (‘skills’) and to ‘be’ (‘attitudes’).
- the phases of game facilitation the competence refers to: ‘preparation’, ‘briefing’, ‘execution’, and ‘debriefing’

- the roles or styles of game facilitation (e.g. the hierarchical, co-operative or autonomous mode (as distinguished by Heron, 1999), or the approach of the shaper, the obstetrician or the coach (as mentioned by Kriz, 2010).
- the focus of the competency: is the competency necessary for understanding the context, applying the instrument properly (the simulation game), enhancing the learning/design process, or dealing with groups?

Also, we laid down a first set of competencies based on literature research of adjacent types of group facilitation and empirical research with a group of experts. Although this may as yet not be regarded as an exhaustive list of competencies, we wonder if such a complete list will ever be compiled, due to the diverse nature of the phases, styles, and roles of the act of facilitating game sessions.

During our explorations of facilitation competencies, we came across research in a different, but related field, namely competences in the realm of trainers, supervisors and coaches (de Ronde & Geurts, 2012). In their research the authors investigated the competencies needed in situations where relational aspects play an important role. Although their field of interest is not identical to the facilitation of simulation games, they came up with ideas that may very well be applicable when thinking about the competencies of game facilitators. Based on theoretical assumptions (Schön, 1983, and Hermans, 2010) and a questionnaire among 76 professionals, they came up with three positions / roles that these professional trainers, supervisors and coaches are engaged in. These three roles / positions are:

- **the Scientist**                      focusing on structure, advice, instruction, and analysis
- **the Sage**                              focusing on meaning, coaching, reflection, and silence
- **the Rascal**                            focusing on humor, imagination, creativity, and fun

These three roles seem to be appropriate for game facilitators, too, and they may be linked to the phases of the gaming process. In the briefing phase, the Scientist is the dominant role, during the game play the Rascal may show up, while the debriefing phase calls for the Sage. We were not able to include these three roles in our theoretical and empirical analyses, but we consider these ideas worthwhile to be included in future research on game facilitation.

To follow up on this research we suggest to follow the methods for competency modelling (Spencer and Spencer, 1993; Boulter *et al.*, 1998) more strictly. Also, instead of using a convenience sample of experts, a more carefully selection of facilitators of different styles and

cultural backgrounds could be made. Finally, we recommend to use explicit as well as implicit methods to elicit competencies.

## **Acknowledgements**

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## Appendices

### Appendix A: IAF facilitator competencies

The list below was adopted from (Baker and Fraser, 2005).

#### A. Create Collaborative Client Relationships

1. Develop working partnerships
  - Clarifies mutual commitment
  - Develops consensus on tasks, deliverables, roles and responsibilities
  - Demonstrates collaborative values and processes such as in co-facilitation
2. Design and customize applications to meet client needs
  - Analyses organizational environment
  - Diagnoses client need
  - Creates appropriate designs to achieve intended outcomes
  - Predefines a quality product and outcomes with client
3. Manage multi-session events effectively
  - Contracts with client for scope and deliverables
  - Develops event plan
  - Delivers event successfully
  - Assesses/evaluates client satisfaction at all stages of the event or project

#### B. Plan Appropriate Group Processes

1. Select clear methods and processes that...
  - Fosters open participation with respect for client culture, norms and participant diversity
  - Engages the participation of those with varied learning/thinking styles Achieves a high quality product/outcome that meets the client needs
2. Prepare time and space to support group process
  - Arranges physical space to support the purpose of the meeting
  - Plans effective use of time
  - Provides effective atmosphere and drama for sessions

#### C. Create and Sustain a Participatory Environment

1. Demonstrate effective participatory and interpersonal communication skills
  - Applies a variety of participatory processes
  - Demonstrates effective verbal communication skills

- Develops rapport with participants
  - Practices active listening
- Demonstrates ability to observe and provide feedback to participants
2. Honor and recognize diversity, ensuring inclusiveness
    - Encourages positive regard for the experience and perception of all participants
    - Creates a climate of safety and trust
    - Creates opportunities for participants to benefit from the diversity of the group
    - Cultivates cultural awareness and sensitivity
  3. Manage group conflict
    - Helps individuals identify and review underlying assumptions
    - Recognizes conflict and its role within group learning/maturity
    - Provides a safe environment for conflict to surface
    - Manages disruptive group behavior
    - Supports the group through resolution of conflict
  4. Evoke group creativity
    - Draws out participants of all learning and thinking styles
    - Encourages creative thinking
    - Accepts all ideas
    - Uses approaches that best fit needs and abilities of the group
    - Stimulates and taps group energy
- D. Guide Group to Appropriate and Useful Outcomes**
1. Guide the group with clear methods and processes
    - Establishes clear context for the session
    - Actively listens, questions and summarizes to elicit the sense of the group
    - Recognizes tangents and redirects to the task
    - Manages small and large group process
  2. Facilitate group self-awareness about its task
    - Varies the pace of activities according to needs of group
    - Identifies information the group needs, and draws out data and insight from the group
    - Helps the group synthesize patterns, trends, root causes, frameworks for action
    - Assists the group in reflection on its experience
  3. Guide the group to consensus and desired outcomes
    - Uses a variety of approaches to achieve group consensus
    - Uses a variety of approaches to meet group objectives

- Adapts processes to changing situations and needs of the group
- Assesses and communicates group progress
- Fosters task completion

**E. Build and Maintain Professional Knowledge**

1. Maintain a base of knowledge

- Knowledgeable in management, organizational systems and development, group development, psychology, and conflict resolution
- Understands dynamics of change
- Understands learning and thinking theory

2. Know a range of facilitation methods

- Understands problem solving and decision-making models
- Understands a variety of group methods and techniques
- Knows consequences of misuse of group methods
- Distinguishes process from task and content
- Learns new processes, methods, and models in support of client's changing/ emerging needs

3. Maintain professional standing

- Engages in ongoing study/learning related to our field
- Continuously gains awareness of new information in our profession
- Practices reflection and learning
- Builds personal industry knowledge and networks
- Maintains certification

**F. Model Positive Professional Attitude**

1. Practice self-assessment and self-awareness

- Reflects on behavior and results
- Maintains congruence between actions and personal and professional values
- Modifies personal behavior/style to reflect the needs of the group
- Cultivates understanding of one's own values and their potential impact on work with clients

2. Act with integrity

- Demonstrates a belief in the group and its possibilities
- Approaches situations with authenticity and a positive attitude
- Describes situations as facilitator sees them and inquires to different views
- Models professional boundaries and ethics (as described in ethics and values statement)

3. Trust group potential and model neutrality

- Honors the wisdom of the group
- Encourages trust in the capacity and experience of others
- Is vigilant to minimize influence on group outcomes
- Maintains an objective, non-defensive, non-judgmental stance

## Appendix B: Stewart's facilitator competencies

Below are the competencies identified by Stewart (2006). The numbers between brackets indicate the prioritization (average score out of 5) given by a group of 101 facilitators and clients of facilitation.

### A. Interpersonal competencies – communication skills

- Verbal (4.9)
- Non-verbal (4.6)
- Written (4.2)
- Questioning (4.8)
- Active listening (4.8)
- Perceptive listening (4.6)
- Empathy (4.3)
- Summarizing/paraphrasing (4.6)

### B. Interpersonal competencies - further skills

- Sensitivity to group (4.6)
- Sensitivity to underlying emotions (4.5)
- Culturally aware (4.5)
- Encourage participation (4.4)
- Negotiating (4.5)
- Flexibility (4.8)
- Recognize conflict (4.5)
- Resolve conflict (4.3)
- Transform conflict (4.2)
- Leadership (4.1)
- Motivate others to achieve goals (4.0)
- Motivate others to participate creatively (4.2)
- Recognize/reward achievement (3.5)
- Model neutrality (4.6)
- Build relationships (4.3)

### C. Management process competencies

- Planning/organizing (4.4)
- Managing time (4.5)
- Manage audio-visual aids (4.4)

- Manage physical environment (4.4)
- Assimilate information (4.1)
- Coaching others (3.8)
- Manage feedback (4.4)
- Manage contract (4.1)

**D. Understanding context competencies**

- Understand organizational context (4.4)
- Knowledge of theory and application of group facilitation (4.1)

**E. Personal characteristics**

- Adaptability (4.7)
- Intellectual agility (4.5)
- Trustworthiness (4.6)
- Results motivation (4.3)
- Objectivity (4.5)
- Emotionally resilient (4.7)
- Self-aware (4.6)
- Self-development (4.3)

## Appendix C: De Vreede et al's list of GSS facilitator functions

De Vreede et al (2002) compiled a comprehensive list of facilitator functions shown below.

### **Atmosphere management:**

- Creates and reinforces an open, positive and participative environment
- Actively builds rapport and relationships
- Encourages/supports multiple perspectives
- Manages conflict and negative emotions constructively

### **Meeting procedures – Design:**

- Plans and designs the meeting
- Develops and asks the right questions

### **Content focus:**

- Promotes ownership and encourages group responsibility
- Presents information to group
- Tests agreements among participants

### **Meeting procedures – Execution:**

- Keeps group outcome focused
- Directs and manages the meeting

### **Technology:**

- Selects and prepares appropriate technology
- Understands technology and its capabilities
- Creates comfort with and promotes understanding of the technology and technology outputs

### **Personality:**

- Demonstrates self-awareness and self-expression
- Demonstrates flexibility



## **Appendix D: Competencies for GDSS facilitators according to Vennix and Akkerman**

Vennix (1996) describes the following characteristics of a facilitator of group model building processes:

### **Facilitation Attitudes**

- Helping attitude
- Authenticity and integrity
- Attitude of inquiry
- Neutrality: refraining from voicing your opinion

### **Facilitation skills**

- Group process structuring skills
- Conflict handling skills
- Communication skills
- Concentration skills
- Team building skills
- Skills to build consensus and commitment
- Handling types of cognitive tasks
  - Generating information
  - Evaluative tasks

Ackermann (1996) inventorised the learning points for facilitators of Group Decision Support Systems. They were clustered per workshop stage as is shown below.

### **Pre-workshop stage**

- 1.1 Providing the client with some control over the meeting
- 1.2 Giving advice to the client concerning the potential dangers of participative methods
- 1.3 Providing information on the benefits gained from participative methods
- 1.4 Ensuring that a match is made between the problem task and the facilitator's skill
- 1.5 Understanding more about the organization
- 1.6 Paying attention to group membership
- 1.7 Discussing the location of the workshop/meeting

### **Workshop stage**

- 2.1 Providing an explanation to the process
- 2.2 Providing a clear set of objectives and corresponding agenda
- 2.3 Creating and displaying an overview of the issue/problem
- 2.4 Managing the group's direction and progress
- 2.5 Ensuring that participants perceive themselves to be equal for the event
- 2.6 Enabling participants to contribute freely
- 2.7 Enabling the group to concentrate on the task being addressed
- 2.8 Asking difficult or sometimes obvious questions
- 2.9 Exhibiting energy and enthusiasm
- 2.10 Making regular reviews of the material
- 2.11 Providing the client with some form of control
- 2.12 Putting aside time to review the outcomes
- 2.13 Re-examining agreed actions
- 2.14 Considering the actions in light of the responsibilities

**Post-workshop stage**

- 3.1 Keeping the energy and enthusiasm alive
- 3.2 Stressing to the client the importance of implementing outcomes
- 3.3 Agreeing on "quick" wins
- 3.4 Promulgating actions achieved
- 3.5 Managing the process of review and control

## Appendix E: Results of the hierarchical cluster analysis

### Attitudes

In the competency area Attitudes, we found the following seven clusters of competencies.

1	confident decisive have watch + whistle know the schedule organized passed preparation and briefing stages with success plan structure punctual secure solution focused structural well prepared
2	appropriate clothing not have smell in your mouth outfit that is not distracting
3	emotional intelligence empathic impartial interested in your audience no preconceived notions / presumptions not biased not condescending not judgmental not wanting to be friends or liked by participants

4	appropriately funny communication skills fun good listener not afraid to speak up open for what happens in the group optimistic positive attitude presentation skills smooth talker
5	not personally interested not telling the clue
6	flexible flexible and creative no time pressure not in a hurry not tense patient
7	trustworthy

Table 6 Competency clusters in the competency area Attitudes (ordered alphabetically)

**Knowledge**

In the competency area Knowledge, we found the following six clusters of competencies.

1	rules and roles rules of the game the game very well understand game
2	appropriate questions to ask - method of debriefing have experience of game know that the debrief is crucial theory of games understand game dynamics and specifics

3	aim in the game (and hidden aim) client's goals; hidden, explicit or conflicting know the objectives of client and game objective what to achieve purpose of the game what clients do with outcome of your game
4	content don't have to know all possible outcomes don't have to know everything some knowledge of the domain subject matter
5	background of participants be able to analyse audience and understand needs know the audience participants target group
6	adjust + prepare space equipment in room materials situation telephone number of helpdesk where / who to get help

Table 7 Competency clusters in the competency area Knowledge (ordered alphabetically)

**Skills**

In the competency area Skills, we found the following eight clusters of competencies.

1	ask questions appropriately as needed assess when group is progressing in a satisfactory manner handle difficult participants implement a whole range of interventions limit the information not have to answer every question not to skew the info select the right intervention stop to give information
2	conduct research equipment in room materials understand the client
3	break the rules break the rules, intervene regulate yourself appropriately when conflicts arise between personal desires + game goals
4	listen smile make eye contact
5	adapt cope with change diffuse situations flexibility imagination take criticism with grace
6	be aware of what's going on keep an overview keep being involved keep learning goal in mind lead manage the process manage time
7	create a safe atmosphere create a safe environment peace maker safe environment
8	empower encourage liveliness motivate, engage people

	not direct read the group
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Table 8 Competency clusters in the competency area Skills (ordered alphabetically)







