Simulation Facilitators As Managers of 'The Promise Of Simulation'

Dr. Elyssebeth Leigh; Gwen Daly; Merrick Chatfield
Elyssebeth.leigh@uts.edu.au; dalyglow@yahoo.com; merrick@adpc.net

Abstract. 'Simulations' range in size from multi-million dollar full-immersion installations to short role-play activities requiring little technology, and the designated 'facilitator' has a huge range of options from which to choose leaning goals and manage chosen activities.

Close attention is usually paid to selection criteria, technical specifications and equipment costs, especially when large sums of money are at stake. However there is less consideration given to identifying 'essential' and 'desirable' characteristics of those managing the learning in action. What knowledge do they require? What skills – interpersonal, intrapersonal and technical – do they need? How do they acquire them? What are appropriate measures of individual capabilities and understanding? Who decides what is "good facilitation" of a simulation?

In this tenth year of SimTect it is highly relevant to raise such questions. While the promise of the technology of simulations has progressed enormously and knowledge about its possibilities is increasing, the task of preparing and developing those who design, manage and assess the learning - which all this effort and expense is intended to deliver – is still under resourced.

This paper raises questions rather than offering answers. As we explored the facilitator's role in managing simulations, we became aware of the paucity of good information and research about the role of the facilitation in simulation-based contexts, and therefore chose to focus on formulating 'good questions' with the intent of raising awareness and generating discussion. While we suggest what might be involved in further developing skills for effective use of simulations, we are convinced that no single set of answers will address all the issues identified.

1. INTRODUCTION

What are 'simulations'? What do they 'promise'? And what are the roles and tasks of those responsible for 'managing' the learning and action in a simulation?

In developing this paper we concluded that researchers are only ever likely to achieve temporary agreement in regard to these questions. Within the widely divergent field of simulation, researchers and practitioners frequently have quite different perspectives on what to examine and what to expect. We anticipate that the 2005 SimTecT conference will be an opportunity to continue exploring this diversity.

With regard to the first two questions, we have chosen to illustrate our particular context and perspective on the use of simulations for learning. To address the third question we explore the current results of research and speculation in regard to the special nature of the facilitation role and related tasks, as we currently understand them.

2. A DEFINITION?

A simulation may be an imitation, a reproduction, replication, re-creation or mock-up of 'an original' [1]. Within this definition however, 'the original' already possesses a depth and breadth of opportunity likely to render impossible the task of achieving a comprehensive definition of the genre. The varied understanding of researchers, designers, facilitators and participants, of what constitutes 'an original' is as individual as is our individual ability to harvest the results of what we each believe is being 'promised' by a simulation.

Within various communities, simulations may be multi-million dollar full-immersion installations, extended document-based case studies or role-play and problem solving activities requiring little or no equipment at all. If however, we consider the notion that a simulation replicates any 'original' the scope of what might be included can be extended to include metaphors, case studies, hypotheticals, and similar 'what if' scenarios. In effect, all simulations may include formal and/or informal representations of anything known or imagined about particular contexts or processes and may be created from the perspective of researchers, designers, facilitators and/or intending participants.

3. SIMULATION AS EDUCATIONAL INTERVENTION

For the purpose of this paper we regard as a 'simulation' anything that is a deliberately designed experience which

- has a degree of direct similarity to an original event - or events
- requires interaction and management around agreed rules, roles, use of technology or 'props' (appropriate and functional objects that enhance the scenario), and recording processes (used by either / both facilitators and participants)
- requires management of the following tasks (by

either / both facilitators and participants). These tasks can be executed in any sequence and as many times as appropriate

- research – active seeking for known (conscious competence) and/or unknown (conscious incompetence) information
- design – creation of a scenario incorporating relevant information to generate interaction
- briefing – to 'set up' a scenario before starting
- interaction - in consequent activity
- debriefing – developing and providing appropriate feedback and transfer of learning.

The intent is that these produce a change in individual understanding of the context (as represented) and actions and choices available to participants

Simulations are 'educational interventions' when participants, facilitators and/or interested third parties expect to acquire new knowledge, new capabilities and/or new or different insights as a result of the 'production' of the activity. Within this general context many factors are involved in creating a simulation as a method for learning transfer.

To ensure a simulation participant does become efficient and effective – beyond their experience of the simulation - involves learning, reflection, analysis, recognition, etc. all making a contribution towards enabling spontaneous and confident selection of efficient, effective and objective responses in the 'real world' that is the 'original' of the simulation. In an educational intervention a learner encounters experiences that interfere with current understanding of skills, knowledge and attitudes, and is led to begin a search for new understanding of all related experiences.

Within any experience there is a potential for educational intervention at various points, through use of assorted tools, producing various depths of integration. An individual's integration of learning from an educational experience will depend on such things as the degree of focus on actual outcomes, the relevance of results to current needs, capacity to explore new options and willingness to take risks. Some experiences will be affirming of existing perspectives – others will be more akin to Mezirow's [4] 'disorienting dilemmas'.

4. AN ON-GOING RESEARCH QUESTION

As educators we have arrived at the following question as a summary of our interests in this area –

*How do **we behave** as educators – and what do we need to know – to be able to simultaneously support the evolution of facilitators' capabilities, participants' learning and design processes in contexts where learning occurs via simulations?*

5. INFLUENCING FACTORS

Three prompts influenced development of this paper, and have predisposed us to believe that we are unlikely to find few simple answers and many complex ones! The first influence is on-going work addressing the general dearth of attention to the role of simulation facilitators and their associated tasks and relevant skills [2] [3]. The second recurs regularly in our teaching experiences where we encounter adults who are being asked to manage simulations of all kinds (skills oriented, knowledge focused and affective aspects of human learning) with little or no support or preparation for what this might entail. These adults are often experienced educators imbued with an expectation that the task of *'managing a simulation as a facilitator'* involves knowing 'the answers' and providing 'appropriate guidance' to ensure acquisition of pre-determined 'learning outcomes'.

While such may be the case in 'closed' simulations[i] - used, for example, in skill development - it certainly does not apply to 'open' simulations[ii] - used, for example, in decision making, creativity and leadership skills development. It is also worth noting that no matter how well known are the characteristics of possible solutions to a closed simulation, once human beings are inserted into the system they retain an uncontrollable capacity to turn any closed simulation into a potentially abundant open system.

The current (over) emphasis on achieving observable and measurable outcomes implemented within a known set of variables (also known as 'competency based training') requires that 'trainers' be well versed in managing the learning context to ensure that 'what was intended to be learnt' has been! This approach must, however, be considered within the much richer context of thousands of years of development of educational technology. Much of this technology has its roots in quite different approaches to learning, including use of 'play' as a valid and reliable learning medium with few assumptions about 'measurable' outcomes. Simulations exist within this wider field, and frequently require quite different kinds of management skills – most especially the ability to withstand the urgent need of participants to 'be told' what to do and what they are learning.

The third - and immediate - prompt for this paper was a conversation that occurred during a previous Simtect conference -

Q Who's in control of the learning in a flight simulator?
A I am.
Q Once a pilot is strapped in, instructions provided, simulator prepared for 'take off' – who's in control of learning going on in the pilot's head?
A I've never thought of that. I run the program, manage equipment and debrief for accuracy, correctness of responses and future skill development goals, etc.

5.1 Our questions

The exchange provoked our curiosity about the array of possible understandings about the role and associated tasks. This facilitator had a clear and appropriate focus on the 'technology' aspects of their role. Had they not been exposed to the possibility of such things as tacit and internalised learning? Did their own training not allow for the impact of the believability and validity of an experience? Where else does it happen that facilitators are unconcerned/unaware of the complexity of the learning available in a simulation?

6. DESIGNING AN EDUCATIONAL SIMULATION

In order to explore these beliefs and expectations it was necessary first to consider the design process. The factors influencing the design of a simulation for learning vary widely and are fraught with difficulties. Simulations may be designed as processes to target multiple outcomes, often conveniently shaped by a specific 'educational intent', and influenced by the passion of an employment sector or industry. 'Invisible stakeholders' operating within particular contexts also exert considerable influence. It is worth remembering that the stated outcomes for a single activity may range from theoretical research to participant learning, from evolving and managing organisational knowledge to the actualisation of an industrial change program!

If we want to 'simulate' a real world set of operations to be inclusive of future possibilities as well as current and past experiences - whose perceptions are 'relevant'? Or alternatively - how does a designer develop a composite scenario that is faithful to widely different perspectives?

Many efforts to develop 'high fidelity' comprehensive 'representations' of a scenario founder on a reef of impossible complications. Gary Shirts' experience - as reported, at NASAGA in 2001 – was that BAFA GAFA, his widely used and highly successful 'generic' simulation of cross-cultural relationships, had actually emerged from failed efforts to faithfully reproduce a Japanese-oriented cultural learning context for the US Navy [5]. His experience highlights the risk of putting such an intensive focus on getting the scenario accurate and supporting technology to function effectively, that future users are constrained from accessing emergent learning processes, not anticipated during the design phase. All these factors and 'perspectives' influence and shape the eventual design – often unconsciously.

6.1 Role of 'perspective'

'Perspective' - as a point of view constructed by an individual or a collective of individuals - emerges from the intake of information by all the senses. The subsequent process of assimilating this information occurs via reference to relevant prior experiences inclusive of, and governed by an individual or group ontology ('frames of the world') as it exists at any particular moment [6]. In this respect, simulations-oriented practitioners and researchers are working via their/our 'frame of the world' and also working within a collective of 'frames of the world' adopted through association with professional and/or industrial environments in which they are located.

As designers play with creating simulations based on both specific concepts of the 'original' and varied 'perspectives' of it, questions are bound to emerge, for which there are unlikely to be 'single/correct' answers. When such questions are given 'one right answers' the boundaries of the design will be constrained by them. Sometimes this is both essential and inevitable – but not always. Designers' knowledge and understanding of 'perspective', and of its potential to shape a simulation, while always limited by their particular standpoint, can also allow openness to alternative possibilities.

6.2 Our questions

For each particular design both endless possibilities and limiting decisions are inevitable. How much are they are influenced by personal perspectives and by such things as current limits of technology and client demands? How much does a facilitator need to understand about the impact of a designer's (or their client's) perspectives? What are possible consequences of use of a simulation in an inappropriate context? How can a facilitator account for their own perspective, when choosing and using a simulation?

7. MANAGING THE PROMISE OF FACILITATIONS

An individual's ability to manage, with integrity, the array of values and beliefs about the nature of the 'original' of a simulation is likely to make all the difference between the enactment being believable and validated, or discounted and denied. Ineffective, or inappropriate, management/facilitation will mean loss of quality in regard to the experience and the outcomes of a simulation, with consequent disregard for 'learning' that has occurred but cannot be validated.

No matter how much high-fidelity imagery or technical capability in a simulation, fulfilling its 'promise' may be difficult indeed, if a facilitator can't help participants make appropriate links between 'representation' and 'reality'. The array of stakeholders involved, the kinds of promises made, and the long list of (usually unspoken) expectations, can appear overwhelming, highly political and difficult to reconcile in any meaningful way. The power to influence how learning emerges from a simulation, as well as how an original is represented within it and what participants consider to be 'useful', creates a complex web of relationships between *simulation fidelity* and *simulation integrity.*

7.1 Our questions

By what measures is it feasible to assess a facilitator's ability to articulate the appropriate level of fidelity for particular learners and specific learning contexts? How does a facilitator learn to sustain the validity of a

simulation, while one or more learners enact their belief that the promise of this simulation has little integrity or use for their own needs? Who debriefs the facilitator – once participants are gone and this experience is available for comparison with other ones?

8. MANAGING KNOWLEDGE - ANOTHER SIDE OF SIMULATION'S PROMISE

Appreciation of what knowledge 'is', and awareness of how to manage various 'knowledges' of the original, (as distinct from 'perspectives of it) impacts what is simulated, and influences what is understood about how a design is intended to stimulate participants' learning.

Given this, there is an obvious need to be acutely aware of the political, social, economic, temporal contextual (etc) factors within which the original is sited. It is also important to be aware of the 'use by date' of such knowledge – especially when it is utilised to shape the design of a process intended to influence participants in their dealings with the future, and future participants' dealings with an - as yet unknown - future.

Current Knowledge Management precepts emphasise the ephemeral and intangible of much that constitutes 'knowledge'. As Snowden [11] points out -

- Knowledge cannot be conscripted, it can only be volunteered
- I only know what I know when I need to know it
- I know more than I can say and I will always know more than I can write down

Within this framework of known/unknown knowledge, simulation designers consider, include or discard a great many factors before ever their creation is brought to 'life' by facilitators. And, as noted above, individual knowledge of the original influences a facilitator's ability to select and manage appropriately. Participants' responses to the results are, of course, similarly influenced. The knowledge factors in a simulation may include -

- Choices about the 'boundary' of the 'original'
- How true to the original each factor needs to be/is
- The rationale for choosing particular factors
- Allowance for participants skills
- Relationships between (for example) knowledge sets and capacity building
- How much research to expend on the design task
- Participants choices about interaction with a design

8.1 Our questions

Where do designers begin when framing the 'promise' of a simulation? On what they 'know', or what they know they don't know? How much do they need to know about participant likely responses? Is a design intended to resolve problems (that is - answer questions and therefore 'close off' the future) or pose unanswered question (and therefore open up a potential for 'futuring')? When evaluating designs what is involved in identifying the initiating questions and capturing emergent ones? What are the 'right' ones to pursue – at any given time? How much will a designer or a facilitator know about the participants' actual experience of acquiring knowledge in a simulation? Can a designer and/or facilitator actually promise consistent, functional and appropriate knowledge enhancing experiences from a design – every time?

9. DILEMMAS FOR THE FACILITATOR

We are using 'facilitator' to refer to the person, or persons, who has *external* control of a simulation as it is being experienced by participants. We consider that participants themselves retain *internal* control of the action. Given this distinction a dilemma for novice facilitators concerns decisions about what, when, where and how they actually contribute to the learning outcomes. Experienced facilitators have achieved personal stability about where and how to contribute and/or intervene - and tend to do so less and less, as their expertise increases!

To consider the dilemma from the novice facilitator's perspective let's assume that the simulation is complete (not in the process of being created), learning intentions have been negotiated, clarified and stated, and some set of learning outcomes has been determined. All that remains is to play. This further assumes understanding – on the part of the facilitator - about the rationale for choosing a simulation to achieve the intended outcomes.

At the moment of beginning both facilitator and participants have their own sets of assumptions about roles, behaviours, knowledge requirements, etc. The entire experience has been 'pre-framed' by such prior assumptions.

9.1 Our questions

The questions here concern the best means of equipping a novice facilitator to deal efficiently and effectively with the approaching encounter. Expert facilitators seem to consider a long list of factors, including -

- I As a facilitator what do I believe I am facilitating?
- How have I informed myself about the purpose, context, history etc. of what lies ahead?
- What are the stakeholder expectations in regard to simulations - and this simulation in particular?
- Given that I trust my own capabilities as a facilitator what 'unknowns' might come along for the ride?
- What have I understood about assumptions made by my co stakeholders and participants?
- -What is their understanding of how learning occurs in a simulation?
- -What are the desired outcomes in terms of skills, knowledge and affective end-state of participants?
- -How do I best perform the 'invisible' act of unavoidably managing an ongoing learning process, in which I (usually) must not intervene?
- -Have external stakeholders acquired sufficient understanding of the likely results of changes to participants' views of the world?
- -What (possibly influential) prior experiences have

these participants had with simulations?

- -How does this group of participants perceive their role in this learning encounter?
- -What prior experiences have I had with the content, context and process of simulations, and of this one I am about to manage?
- How will/might this influence my behaviour?
- -Have I determined the level of personal impact?
- Is it relevant? Why this particular level here?
- -What prior knowledge or previous experience is relevant and required?
- -What has been identified as the minimum entry state of participant?

10. REQUIREMENTS OF A FACILITATOR

There are, as yet, no generally available measures for the amount of training and level of experience required to assess a facilitator as competent to manage simulations. Nor is there wide agreed about an appropriate balance of time and effort to spend on iring competence in managing the technology versus time to learn about those other aspects of a simulation likely to influence a learners' ability to integrate new awareness of personal learning and capabilities.

At issue is the extent to which facilitators are expected to manage their work from within a 'world view' of being a manager (in the know) directing the simulation technology while largely unaware of how that same the 'technology' affects human understanding and learning of things beyond technical skills.

Effective integration of these two perspectives is a key feature of ensuring the success of the experience for the person 'in' the simulator. How might a focus on the 'measurable' and 'observable' aspects of a participant's ability to demonstrate technical skills limit the broader potential for 'learning'? Are such aspects as self-awareness, problem seeking, contextual flexibility and 'response-ability' [4] neglected in the chase for chnical acuity? And if this is the case what are the human, social costs of such limited attention to the potential for learning offered by the promise of simulations?

10.1 Our questions

What skills are required to engage, gauge, integrate and understand our 'selves' in the context of a simulation? How do we document the outcomes of such learning? How do we measure them? What happens when a facilitator extends the learning to include a focus on non-technical learning factors? How do we integrate the facilitation role into the efficient and effective design and simulations?

11. SIGNIFICANCE FOR FACILITATORS

The significance of all this for simulations facilitators, is the importance it places on an individual's ability to respond to questions about such things as the 'fidelity' of a simulation, the range of experiences of different participants within the same simulation and the impact of the unique experiences of each participant in each new 'production' of an activity. Additional factors faced by a facilitator include deciding how much a chosen activity is an accurate, or approximate, representation of an 'original'. This, in turn, may depend on the designer's depth of understanding about the original.

11.1 Our questions

For facilitators, an on-going question, when choosing a simulation as an educational intervention, is the extent to which the simulation enables participants to increase their knowledge and understanding of the 'original' while also learning new things from their experience of this representation. A second question concerns knowing how to make the moment-to-moment micro-adjustments among the elements of facilitator role and tasks, participant actions and expectations and content fidelity and representativeness to maintain the whole in a state of balance. And thirdly is the question of how experienced facilitators sustain such a balance without slipping into an unconscious arrogance built on prior knowledge and the comfort of having 'seen it all before'.

12. FACILITATING SUSTAINABLE CREATIVITY AND COMPETENCIES

When a simulation is ended and participants are no longer constructing the simulation, a facilitator's skill is evident in the degree to which the learners have become creators and managers of their independent knowledge, better equipped than before the experience? While it may seem that 'evaluation' processes cover this most of them focus on the content acquired, or the 'quality' of 'the experience'. Few efforts are made to ascertain the value and contribution of the facilitator. Yet, to some extent, the facilitator's skill is the component without which all the rest is an inert mass of potential.

12.1 Our questions

When I am no longer there, when the simulation is no longer there, and all the money invested in the experience is no longer there, and the participants are there alone with their learning competency, what will I have really given them?

What's really going to have counted towards their independence, confidence and capacity to create relevant solutions to the real world problems they are facing? As a manager, which is more important - what staff are doing when I am managing and in control? Or their actions when I am not there to manage and my they are required to complete real tasks alone? Similarly, for a simulation to be successful as a learning experience for participants what is more important - what is happening while a well designed scenario assists the discovery and validation of relevant competencies? Or what is happening afterwards and participants are required to manage their own reality?

How does a facilitator become convinced that participants have achieved agreed requirements for competency? To what extent can there be certainty that - in handing the variables beyond those defined by the competency standards and directly addressed in the simulated context - their self-confidence is justified? How can a facilitator be certain of participants commitment to their on-going improvement of their competencies? How and what will they do when they are in the real world and encounter a crisis beyond the known and the experienced? Has the simulation experience prepared them adequately for this? And how would they answer these questions for themselves?

13. DEVELOPING FACILITATOR CAPABILITIES

While there is some research emerging towards building a useful body of knowledge to assist in developing capabilities for facilitators of simulations much of what is currently in use has been borrowed from other fields. As Kato points out there is no generally agreed understanding of the 'practice field' [10] for the role explored in this paper. He suggests that during any one simulation session *'a facilitator enacts multiple roles of 'coach', 'guide' 'educator', 'trainer' and 'supervisor'* [5]. His work is developing some interesting ways of thinking about the role – both from within and outside the role itself.

Heron's work on facilitation [4] is perhaps the closet yet available for use by simulation practitioners. But his work is situated firmly in action learning and co-operative enquiry, where the facilitator has quite a specific set of roles. Some of these do approximate that of a simulation facilitator, But many do not - and the expectations and assumptions of each role will always be quite different. Kaye's work [6] is also extremely helpful in defining the layers of capability that an experienced facilitator will draw on in managing the interplay of communication in simulations. Similarly Percival's and Ellington's [9] work on analysing the relationships among simulation forms provides guidance towards understanding the complexity of the field and its component parts.

But there is much to be done, and many more possible sources for developing skills – and we think that it is more important for individuals to be any relevant developing skills rather than identifying the 'perfect' ones!

13.1 Our questions

As we approach the end of this paper we are painfully aware of the complexity of the questions that lie ahead as we continue to explore what is involved in preparing facilitators of simulations.

Some of the questions that lie ahead will include –

Is it possible to delineate a finite number of roles for facilitators of simulations? Would there be a value in such a task? What might be the range of capabilities for an 'expert' facilitator? Will they vary across different industry sectors? Who will be the 'judges' of such expertise? What will be the measures by which 'expertise' is judged? How are capabilities acquired? What is the role of theory? Of practice? And of feedback? (among other things!)

When there are choices to be made among different types of simulation what knowledge will a facilitator need to possess to decide what is relevant? Appropriate? Suitable? And 'manageable' within the know circumstances of the specific situation?

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[i] Characterised by focus on a 'problem' requiring a solution whose features are know to the facilitator.

[ii] Present a situation (incompletely 'realised' by the designer) - invite speculative actions by participants without facilitator help - who does not know what will happen *'because participants have not enacted it yet'.*