The learning starts when the game stops

Or … Learning from debriefing

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The learning starts when the game stops

This session will be partly hands on, partly ideas exchange, partly thought provoking, partly project proposal.

My thesis, in rather stark terms, is that learning starts when the game stops. To soften it, one might say that learning occurs during a game only if some form of in-game debriefing is accomplished. This has major implications for the gaming profession. My impression is that some "serious games" simply do not use debriefing. At least one major book in the area does not contain the word "debriefing" anywhere. If we wish learners to come out of the session being able to say "I see the point" or "I learnt" or "I now understand", then the games need to be fully debriefed. Undebriefed learners can easily carry a message "that was fun, but I'm not sure why we did it". For learners to learn, they need to say "I see the point" or "I learnt" or "I now understand". If the term "serious" is to carry a strong message, then the games need to be fully debriefed.

Abstract (in programme book)

Learning starts when the game stops

Learning occurs in the debriefing.

- Not in the game
- Learning during a game, only if some form of in-game debriefing is accomplished (ie, the game stops)
- For learners to learn, i.e., to say "I see the point" or "I learnt" or "I now understand" then in-game and post-game debriefing needs to be done and done thoroughly. Undebriefed learners can easily carry a message "that was fun, but I'm not sure why we did it".

Implications for the gaming profession:

- Some "serious games" ⇒ no debriefing
- Undebriefed learners:
  - "that was fun, but I'm not sure why we did it"
  - Danny Saunders article
  - negative for the profession.
- If the term "serious" is to carry a real message, then the games need to be fully debriefed.
**ISAGA**
- ISAGA → major role in the international gaming community, by:
  - emphasizing the need for debriefing,
  - providing guidance, techniques and training.
- Session – partly:
  - hands on,
  - ideas exchange,
  - thought provoking,
  - project proposal.

**Overview & steps**
- Intro: elements from abstract
  - Participation = 30
    - Participation in a debriefing
    - Debrief the debriefing
    - Demo? Others?
  - Presentation: On debriefing = 20 (10)
    - Discussion
    - Discuss debriefing SIG in ISAGA = 20 (7)
    - Buffer + wrap up = 10

**Overview**
- Silence
  - Individual forms
  - Discussion
  - Group forms
  - Reading: film
  - Report back
  - Reading, PPT presentation
  - Portfolio
    - Reading; Consolidation

**Groups**
- Groups: 4 or 5 or 6
- All-1 = workers
  - Instructions now
- 1 = (a) observer → (b) debriefer for debriefing
  - Instructions later

**Individual form - silence**
1. Emotions then. How did you feel?
2. Emotions now. How do you feel?
3. Event(s). What happened?
4. Explanation. Why?
5. What could you improve? Self, other, system?
6. Other things?

**Workers: Past experience**
- No time for a game; so previous experience
- Choose one (KISS):
  1. Game experience as participant (player),
     - Preferably one that you feel was not debriefed as well as you feel it could/should have been.
  2. Game experience as facilitator,
     - Preferably one that you feel you did not debrief as well as you would have liked (maybe with hindsight)
  3. Some learning experience as a learner,
     - Maybe as a student, intern, trainee, trainer, researcher, teacher, worcker, traveller, etc.
- Think back, recall, replay, refeel, …

**Observers → debriefers**
- Phase 1
  - Observe, make notes
  - Guide
- Phase 2
  - Facilitate discussion
  - Guide

**Observers**
- You cannot participate with your group.
  - Observe mostly your group.
- You may also observe other groups briefly.
- Stay away from the group; do not go too near or interfere with the participants.
- Keep a straight face; do not show any sign of surprise, pleasure, disappointment, etc.
- With pen and paper, take notes on visible aspects of behaviour and interactions.
- Who does what (not why).
Debriefings 1

- Form a circle - round; not oval. If necessary make people move to obtain a tight round circle.
- Summarize the group's ideas. This is not a simple list from everyone's individual forms. You should capture the essence and collective thoughts of the group.
- Keep an eye on your watch. Leave enough time to conclude. Each person should have more or less the same time to share.

Debriefings 2

- Facilitate the discussion: Do lead not too openly once it has acquired its own momentum. Make sure everyone who wishes to contribute can do so. Remind people to speak respectfully.
- Avoid "yes/no" Qs. Use "why?": Do not push people to speak against their will.
- Do not tell participants what you think they should have learned.
- From time to time, summarize the general sense or main points - clarify an issue before moving to another question.
- Follow the structure of the group debriefing form. Encourage participants to focus on the item in question. Bring wanderers back to the main discussion.

Debriefings 3

- No personal attacks:
  - Criticism should be formulated positively: focus on what can be done better next time.
  - Remain impartial at all times.
  - Do not allow comments that are racist or sexist, or plainly negatively prejudiced - (for example, disrespectful or intolerant of difference, especially in culture and religion).
  - However, considerate and dispassionate discussion of these issues is good.

Group sharing

- Brief summary by each group
- 30 seconds each!!
Some serious games people learning plays, course portfolio.

Debriefing for learning

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Qs
- Travel
- Sea
- Diving
- Mountains
- Walking

Survey
Games, simulations, role-plays...
- Design / designed games?
- Conduct games in their training?
- Participate in games?

Debriefing
- Design debriefing?
- Conduct debriefing sessions?
- Participate in debriefing sessions?

Terms
- Game, exercises, simulation, role-play, model, virtual world, serious games, simulations/games, structured exercises, policy exercises, ...
- Many terms & defs
- Wittgenstein
- Distinguish
- Gs for entertainment ≠ learning
- Maybe some G, but done differently
- Fashion

Benefits of s/g
- Relatively inexpensive
- Relatively low risk & low threat
- Dynamic environment; complexity
- Critical analysis
- Game critique
- Reflection
- Feedback
- After-game discussion
- Pause & learn

- Easily revisitable / reproducible

- Relatively easily debriefed
- Reflect; share; learn from reflection on experience

Grumble, gripe, (Grogner, ralet)
- Unfounded & dangerous assumptions
- People learn from games
- Having fun in a game produces learning
- Technology helps people learn
- Video games (automatically) result in learning
- Some serious games people

Alternative assumption
- People learn from processing (reflecting on, conceptualizing and sharing) their experience
Alternative → standard / ordinary

- Historically
  - Simulation, games, project work, labs, etc
  - "alternative" methods
    - Prove that it works = motivation for some research
- Need to "get with it"
- Think: games & simulations
  - standard method
    - Obstacle = myths, lack of debriefing, fear

Objectives … At stake

- Objectives & debriefing
  - Closely related
  - Unclear / confused objectives
  - \textit{uncertain learning}
- Important to understand \textbf{objectives} in games
  - "On veut atteindre des objectifs autres que le jeu" — Teresa Colombi, SEGAMED
- At stake
  - Students' learning, students' wellbeing
  - Gaming profession
  - Future of gaming — especially serious gaming

Example G

- Objective = First to guess picture

Objectives of photo G

- Game objective ≠ learning objective
- Game objective
  - \textit{1er} to guess picture
- Possible learning objectives
  - Get to know famous places
  - Process of mental image representation
  - Thought processes when guessing (matching vision & memory)
  - Teamwork

Another example

- Example — Workshop at Uni in Thailand
  - Game + Debriefing
- Objective of workshop
  - Train teachers to run simulation/games & debriefing
- Objective of s/g
  - Build the best tower
  - Learning objective
    - Learn teamwork skills and concepts

Objectives

- Simulation/game objectives
- ≠ Learning objectives
  - Objective:
    - Make best tower
  - Objective:
    - Learn about teamwork
Debriefing

Industry: Aviation, Navigation
Focus: Feelings

Debriefing for learning
- Make an agreement
- Draw a line
- Guess the hidden target

Games & learning = 2 separate things
- Implications for how we help people to learn

Learning objectives ≠ Game objectives
- when game ends
  - we do not learn in the game

Who does debriefing?
- Military
- Industry: Aviation, Navigation
- Diving (leisure / professional), etc
- 'Traditional' edu games
- Med & HC
- Serious games
- Medical simulation
- Business games

Games & learning
- Meta debrief
- Game # learn
- Debriefing
- Learning objectives
- Game objectives

Where? When?
- An everyday activity - non-game experience
- Process: Unstructured, unprepared, ad hoc
- Objectives: Unclear, unexpressed, undecided
- Focus: Feelings

- In games - game experience
  - Process: Structured, prepared, timed
  - Objectives: Clear, achievable, agreed
  - Focus: Cognitive / behavioural
  - Feelings are taboo in higher ed

Short rationale
- Learner
  - Lecture
  - Reading
  - Film, media
  - Internship
- Game
  - End when game ends
    - we do not learn in the game

Learn in the game
- Start when game ends
- Learn outside/after the game

Implications for how we help people to learn
- Become a better cross-cultural communicator
- Get to know other people

Objectives: Unclear, unexpressed, undecided
- Collect people's names on a form
- Guess the hidden object
- Make an agreement with the other group
- Draw a pic from spoken instructions

Engagement +, Looking back, reflecting, asking, conceptualising, relating to other, learning, exploring ideas, etc

Engagement
- Decisions
- Excitement
- Emotions
- Complexity
- Pressure
- etc.
Maj. ... Doyle ... leads an after-action review with role-played Afghan army, police and border police officials during training for ... Security Force ... Team at the ... Training Center at Fort Polk, LA.

Col. ... Ito, ... briefs the Final Exercise After Action Review at HQ., US Army Pacific on November 22, 2002.

Air force, 1941
- In September [1941] it was re-equipped with Spitfires. In the photograph ... pilots are being debriefed next to one of their Spitfires after a cross-Channel mission.

Air force, 1943
- Fiskerton: Back from Berlin 22/23-11-43. ... Ron Brunt ... and crew are being interrogated about her sortie to Berlin. ...

Air force, 1944
- Debriefing de l’équipage du 433e Escadron (Porcupine), ... après un raid sur des sites où les Allemands utilisaient des bombes volantes, en France. Skipton-on-Swale, Angleterre, 1944. Photographe inconnu.

US Army
- After Action Review in Simulation-Based Training
- By Larry J. Meloy, Stephen J. Godfrey and Donald B. Langston
- US Army Research Institute for the Behavioral and Social Sciences
- Victorville, Calif.

Military
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Aviation & space
- Make lost slides

Flying club
- Post flight debriefing at Kai Tak

Aviation & space
- Make lost slides
Instructors can review and debrief a student offering a comprehensive critique of the entire flight including flying procedure, the decision to eject and the correct body position for ejection.

NOAA: Fisheries Monitoring and Analysis Division

- "FMA requires observers to complete a debriefing process after each cruise."
  - Elements:
    1. Observer does visual report for each assignment
    2. Debriefing interview is conducted by a staff member
    3. Data check is conducted by the debriefer
    4. Observer completes anonymous post-observation questionnaires (comment on, and suggest changes to, the FMA Division, and the services)

Nanhai Marine Archaeology, MY

- "Diver debriefing all other divers after every dive"
  - To ensure that all divers were aware of each other’s work and to prevent damage to the weak structure, each diver was required to de-brief all the others after every dive.

Diving: Video debriefing

- "All ... classes are videotaped for educational and review purposes only. ... it is invaluable for students to visually focus on their individual in-water skills, situational awareness, communication, and team diving."

Instructor training, TH

- "Mark and the team will ... show you how to brief on the dive boat before diving and how to debrief after dives with your students and they will show you how to problem solve underwater."

Diving in MY

- "and the briefings/debriefings sessions were always something to look forward to!"
  - "Loved the pancakes, the Pizzas and the Debriefings."
  - "The fact of going through briefings and debriefings before and after dives and sharing our experience truly enriched each dive and enabled us to learn so many things about marine life ..."
Serious games (SGs) are being increasingly used in the health sector for training and practice clinical skills. However, the development and application of game technologies for health-related serious games is still in its infancy. This is often due to the shortage of expert-level health care educators and academic researchers in this field. Furthermore, serious games in healthcare are not always debriefed, which can lead to a lack of understanding of the content and impact of the training.

Objective:
- Address the shortage of expert-level health care educators and academic researchers in the field of serious games in healthcare.
- Address the lack of debriefing in serious games in healthcare.

Solution:
- Cut-edge 3D virtual hospital and lifelike patients provide a rich environment for practice clinical skills.
- Fluid dynamics used to simulate blood flow.

SGs in HC

No or insufficient debriefing

Med & HC

1. Serious games for health
   - SG, many buzz words, no debriefing
   - SG, many buzz words, no debriefing

2. Med sim
   - SG, many buzz words, no debriefing

Some serious games in HC

($&$ in other areas)

No or insufficient debriefing

SG: 409 refs

Med sim in specialised medical simulation units or teaching hospitals
- Focus = med & learning → debriefing
- ‘Serious games’ for HC by (serious) games companies
  - Focus = game & commercial → no or insufficient debriefing

Similar to other areas:
- ‘traditional’ s/g (debriefing standard)
- Serious games (debriefing often missing)
“Learn by doing”, but no debrief!

“Our 3D serious games and simulations are fully interactive allowing for multiple outcomes of the same scenario depending on the choices made by the learner. Our learn by doing approach allows for the employees to know what to do virtually so they do not cause harm physically before they are fully trained and ready. Find out how our serious game or simulation development solutions can help train your employees.”

Wikipedia

“Debrief” “0 of 0” = not found http://en.wikipedia.org/wiki/…
- … Serious_game
- … Serious_Games_Initiative
- … Medical_simulation
- … Simulation_game
- … Games_for_Health

Full of curiosities ☺
A recent systematic review of high fidelity simulation literature identified debriefing (including debriefing) as the most important feature of simulation-based medical education. – Fanning & Gaba. 2007. The role of debriefing in simulation-based learning. Simulation in Healthcare.

ACTIVSim (McGraw-Hill) is set apart from other medical simulators by several unique attributes, including:
- Web-based access
- Life-like evaluated interaction
- Quality advanced graphics and sounds
- Post-simulation debriefing, including self-evaluation
- These features... were created... through a... combination of... technology... medical consultation, and over 100 years (sic) of educational knowledge
- Personal Clinical Debriefing in Every Experience
- ACTIVSim applies the same debriefing path used in most student clinical experiences, including student self-assessment and individualized feedback.

Effectiveness

Examining the Effectiveness of Debriefing of the Point of Care in Simulation-Based Operating Room

Team Training:

Abstract

Debriefing occurs in the high-stakes environment of patient care training and involves the thoughtful discussion of the case by the trainees with an expert who provides feedback on their preformance. A recently developed tool... designed... to support the facilitation of this discussion... simulates the clinical environment... allows learners to practice critical decision making... and track their progress... The tool... has been shown to improve the effectiveness of debriefing... and has been used in... healthcare simulation centers... The tool... provides a structured approach to debriefing... and can be used in... healthcare simulation centers... to improve the effectiveness of debriefing...

Debriefing Training !!!

One of the goals... is... to improve our skills in the art of debriefing after clinical simulations. A simple tool to structure a brief debrief when time is very limited.
Experiential learning

Foundations of learning in debriefing

Kolb

5. Experiential learning

David Kolb

Training structure – cycles

Single cycle

- Briefing
  - experiential learning (learner training, learning to learn)
  - specific s/g
- Simulation/game per se
- Debriefing → learning
  - Individual work
  - Sharing & discussion
  - Follow-up

Multiple cycle

- Briefing
  - s/g 1
- Debriefing → learning
  - s/g 2
- Debriefing → learning

Follow-up activities

Debriefing:
- "Learning is the process whereby knowledge is created by the transformation of experience." (Kolb, 1984)
- "Debriefing is … the most important part of simulation and yet it tends to be the most neglected, …" (Crookall, 1992)

Key ideas

No debriefing = no learning
Learning = only with debriefing

Concluding thoughts
Learning from debriefing

- Learning "in a game" = impossible
- Learn from debriefing the game = possible
- Some games and serious games companies → impression (that they believe) that their game does the learning → NO!
- Learners / participants do the learning
- Facilitates help
- Debriefing helps

A few key ideas

- Learning is a journey towards an (relatively) unknown destination
- Skills and know how are learnt on task (doing), not from lectures or books
- The real world is interdisciplinary, multi-skilled around the edges by academics (maybe to avoid skills)
- We learn what we do
- Learning is the processing of experience
- Game experience is processed in the debriefing
- Learning happens in the debriefing

Learning from s/g

- Learning = processing experience (Kolb)
- basic process of human adaptation (Kolb)
- Simulation/game = experience
- controlled, low-risk, low-cost, re-visitatable, etc
- Debriefing = Processing the experience → Learning
- Simulation/game = opportunity to debrief

Debriefing for learning

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Learning from debriefing

- A few key ideas
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Generic debriefing structure 1

Feelings:
- What was your first reaction to the activity?
- How did you feel during the activity?
- How do you feel now?

Analysis and explanation of the experience:
- What happened?
- Why did it happen?
- Use recordings

Generic debriefing structure 2

Application to other experiences and systems;
- differences & similarities:
- What is this activity about?
- What other situations does it remind you of?
- What differences are there between the simulation and your previous experience or other systems?

Generic debriefing structure 3

Future:
- What will you do differently in this kind of situation in the future?

Learning:
- What have you learned about yourself? about others? about this kind of situation or system?

Generic debriefing procedure

- Break
  - cool off - de-role - 10 mins to 1 week
- Individual
  - Silence, forms, open-ended but specific: Qs reading, ...
- Discussion - with observer/debriefer
  - Small groups (again remedial Fish Bowl)
  - Group forms, sharing individual answers, D-game (card game), learning, thinking...
  - Plenary - summary feedback.
- Writing (& reading, discussing)
  - Memos, letters, reports, ppt, posters, analyze recordings, reading docs, lecture, design new game, conf.
  - Group / Individual.

Example topics (maybe for a AB pic G)

- Participants
  - What things were you practicing?
- Observers
  - Summary of notes made during play
  - What things were they practicing?
  - Which ones do they need to improve?
Example forms
- Example of debriefing forms
  - TOWERS-debrief_individual_EN_b.pdf
  - TOWERS-debrief_group_EN_b.pdf
- Example of written work
  - IUP-M1_08-09_job_interviews_memos.pdf

Actors in debriefing
- Participants → debriefers
- Various roles, incl observers
- Observers → debriefers
  - Maybe one of the roles
- Facilitator(s) → debriefers
  - Maybe previous observers or participants
- Game designers, technicians, engineers, et al
- Outsiders (eg, lecturers, authors)
- Others ?
- But debriefers need to be trained !!

Serious’ games, with no debriefing
- No sense, nonsensical
- Simulation/games with serious debriefing
- 2nd generation of (serious) games
- Med sim (aviation, trad sim, etc)
- show the way

Tara
 Merci – FR
 Thank you - UK
 Kap khun krub – TH

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