“Exploring Facilitated Debriefing Techniques Using a Diary Study”

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Current Research Focus

– To discover barriers to learning and mitigation strategies employed by simulator instructors during post-simulator debriefings.

– To improve learning outcomes for professionals who work in high-risk activities.

– This knowledge might be usable in other domains that utilize simulation for training such as ATC, etc.

Debriefs are an opportunity to learn in high risk industries that face abnormal events – they are under appreciated!
Background

• Advanced simulation in training has been shown to be a very important part of experiential learning

• The literature shows these simulator sessions are more meaningful when followed by a student-instructor debriefing.
Adult Learners

• Most are geared towards “self-betterment”
• Resilience to learn and utilize in novel ways after training
• Experiential learning: 20-25% better knowledge attainment
• We relate the classroom information to the simulator to build experience
• Worst way! Giving them the answers/information and then asking them to reproduce in the simulator. Context is extremely important
Student Instructor Briefing

• The most important part of the experience

• Little industry consensus on method

• Requires students to engage in critical thinking, decision making and judgement.

• The goal is to help the student transfer learning from the simulation experience to their practice.
Facilitation as a debriefing tool

• From reflective practice literature – describing thought process
• Flanagan – Critical Incident Technique – A practitioner led debriefing

• NASA research showed that facilitation techniques should include the following:
  • Encourage self-reflection
  • Strategic silence
  • Active listening
  • Follow-up to take them further into problem or other related challenges
Our study plan - Diary Study

• How to decide what methods of data collection are best for natural settings where work is complex, messy and frequently unpredictable?

• Woods (1992) tells us that in complex and dynamic systems, “We must use different subject populations than the typical subject of psychology experiments.”

• Life does not follow a script and acts as a natural laboratory to be keenly observed. As such, the debriefing process is a perfect natural setting for ethnographic research

• Must be sure to balance obtaining the valuable first person account without interfering with the natural process at work
Our study plan – Expected Questions

1) Overall, how did the facilitation attempt work? High-level perspective

2) What were the indications noticed that the crew arrived ready for self-discovery, or not?

3) What were the barriers to facilitation that you noticed? How were they discovered?

4) Were there any mitigation strategies attempted to any barriers? If so, what were they and how well did they work?
Task 1 – Literature Review

• Reviewed over 100 journal articles and books.
• This gave us the information to better understand of both effective and ineffective facets to post-simulator training debriefings
• Both facilitated and otherwise
• Solid foundation to move forward
Task 2 – Subject Matter Experts (SME) Meetings

- Small group of instructors & managers as to what their concept of a debriefing is and should be
- Most described a facilitated type debriefing
- Gave us the ability to better understand what the real world of professional flight debriefing looks like
- A good starting point beyond the literature review, real world discussions
- Discussed the barriers that they find on a daily basis to inhibit learning
Task 3 – Participant (Instructor) Training and Calibration

• SME education
  – Reviewed NASA literature on the subject
  – Reviewed primary literature on debriefing and mitigation
  – Basically brought them up to speed on the state of the science

• SME recalibration
  – Educated them on the study and the participant’s requirements
  – How to make and save/submit diary entries
  – How to perform a facilitated debriefing
    • Calibrate them to the same type and level of performance
    • Methods of facilitation
Task 4 – Diary entries/Data collection

• Instructors made diary entries based on debriefing experiences
• Qualitative research by nature
  – Ethnographic – dynamic, observational, unexpected environment
• Instructors are agile to manage educational problems
• This is a unique research method and diary studies are not common
• First study we have found using a recording pen instead of paper/pencil for a diary study
Task 5/6 – Organization and analysis of data

• Met IRB requirements
• Listened to 7 hours of recordings (43 entries)
• Transcribed each recording
• Captured themes as reviewed each entry three times at a minimum per entry
• Because of multiple themes per entry, total is greater than 43
Task 7 – Findings

• Numerous findings emerged from our research
  – Most common (11 sessions) it was helpful to set the expectation of facilitation for the pilots
    • Determines how they manage their involvement and time management
    • Determines their expectation of the duration of the debriefing - not watching the clock
  – Next, keeping them as engaged as much as possible (9 sessions)
    • Part of the role of facilitation
    • Student led
    • Keep putting the conversation back on them
    • Let them talk about what they think was the most important or insightful for their learning process
  – Keeping them relaxed (6 sessions)
    • Let them know from the beginning if they passed or not for pass/fail type evaluations
    • Give them the freedom to explore their performance and areas related to the event that might yield other answers or solutions
    • Let them know what to expect from this type of debriefing
Theoretical Contribution

• The first known corpus to capture barriers to learning and potential mitigation strategies to facilitation in the aviation setting.

• Potential to serve as a guide for more targeted research to delve into specific barriers and successful mitigation strategies.

• Can benefit across domains that use simulation and their debriefings.
Potential future work

• The FAA advisory circular was updated in spring of 2015 however, despite improvement it is still missing the following -
  – Specific guidance as to how to conduct a facilitation debrief
  – Guidance is missing on how to manage common obstructions to learning when encountered.

• The FAA, airlines and a major flight training center is interested in the results to help with how instructors should be trained.
• The End
• Questions?