



Telling Stories from the Sea: Facilitating Professional Learning in Maritime Post-Simulation Debriefings

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Abstract

This study examines storytelling episodes in 13 video-recorded and fully transcribed post-simulation debriefings from a maritime navigation course. The aim is to scrutinize the facilitators' practice of telling stories from the sea during debriefings, to explore the organization and inner function of storytelling in debriefing. A combination of dialogical-performative analysis and a structural narrative model was conducted to analyze and contextualize stories from working at sea in the debriefing practice. The analysis shows how storytelling in debriefing frequently occurred, and was mainly occasioned by critical discussions about students' mistakes during the simulated scenario. In such a critical debriefing practice, the results show how telling stories about lived experiences of professional dilemmas and mistakes serves multiple functions. In line with research results from previous studies on storytelling in higher education, this study demonstrates how storytelling connects the simulated event to the professional responsibilities on board seagoing ships. In addition, storytelling might also serve face-saving purposes in this critical debriefing practice, which raises important questions regarding psychological safety and the debriefing climate.

Keywords Maritime education and training · Simulator training · Debriefing · Storytelling · Professional learning

Introduction

Traditionally, the life of a sailor has been the subject of numerous legends, myths and stories. However, the focus of this article, concerning stories told from work at sea in contemporary maritime education and training (MET), may lack the dramatic flair of

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maritime folklore. Nevertheless, the stories passed from experienced master mariners to their students are argued to be part of shaping the community of practice and connect simulated practices towards work at sea (Emad and Roth 2016; Wahl 2019). In classical literature on becoming a member of a community of practice, learning a profession involves observation, supervised experience and storytelling (Lave and Wenger 1991; Orr 1996). These activities are mainly situated *at work*, i.e., learning the institutional rules, norms, ethics, jargon and customs of that work culture through apprenticeship and on-the-job training. In educational settings, such as the debriefing activities examined in the present study, supervised (albeit simulated) experience and storytelling practices may not carry the same meaning as they do in learning a profession at work (Roth and Lee 2006). The problem of learning a work practice in the school context is regularly framed as a problem of learning transfer between these two contexts (Rogoff and Gauvain 1984). The metaphor of learning transfer has been criticized for building on the idea of the acquisition of knowledge as entities in a container, out of which they can be transferred as required (Hager and Hodkinson 2009). In our view, learning is not about internalizing knowledge or a set of predefined skills and transferring them to a similar practice, but about gaining an understanding of the relations between individuals acting and the social and material circumstances in which they act. Taking a knowing in practice approach, our view is that knowledge is a continuous process, always in fluctuation, arising from learners' engagement in social and material practices (Billett 2001). How social and material constructed practices are constituted, such as participation in simulated maritime environments, therefore is fundamental for what is possible to learn and how participants choose to use their existing knowledge and experiences as resources in new relevant contexts (cf. Lantz-Andersson, Linderoth and Säljö 2009).

For instance, Engle (2006) argued that learning between contexts is more likely to occur to the extent that learning and working contexts have been framed to create what is called *intercontextuality* between them. In particular, intercontextuality occurs when learning contexts are created as connected to one another, and when the content established during the learning activity is considered relevant and creates relations to the new context (Wiig, Silseth and Erstad 2017). In the present study, we investigate the idea that intercontextuality is created socially in post-simulation debriefing interactions. In particular, we focus on how the facilitator and the participants engage in making connections using storytelling of work at sea as tools to relate the simulated experience to work on board a vessel (cf. Wahl, 2019). By conducting narrative analyses of video data from a maritime navigation course, the overall aim of the study is to find answers to the following questions: a) What occasions storytelling in debriefing? b) What lessons to be learned are made through storytelling? c) How do students respond to stories told? Questions a and c are connected to the context of storytelling; question b is concerned with the inner function of the stories told.

The analytical lenses used to answer these questions are the structural narrative analysis model (Labov and Waletzky 1997) and dialogical-performative analysis (Bamberg 2012). Both approaches are grounded in sociological and socio-linguistic perspectives of talk (Cortazzi 2014). The underlying premise in this tradition is that talk between participants is sequentially ordered, constituted in practices of taking turns to talk in naturally occurring conversations. The sequential organization of talk also concerns narratives, even when storytelling takes the form of monologues. As pointed

out by Esin (2011), a story has a beginning, a middle and an end, always responding to the question what happens next. If there is no clear beginning, at least a story will have a middle and an end (Moon and Fowler 2008). The two narrative approaches share an analytical focus on detailed analyses and comparisons of small samples of data, and combining them provided a general picture of the overall function of storytelling as a learning resource in the data corpus, as well as detailed accounts of how students responded to the stories told (cf. Riessman 2008).

In the following section, we provide background on the practice of debriefing after simulation. As few studies seem to report occurrences of storytelling in debriefing, our aim is to outline and discuss what constitutes our understanding of debriefing in current research. Thus, general guidelines for facilitating debriefings are presented in Section 2.1. Practice-oriented studies that similar to this study, take the social accomplishment of debriefings as the main focus are reviewed in Section 2.2. The analytical framework is introduced in Section 3.1 and the data corpus and analytical process in Section 3.2. The analytical results are reported in Section 4, followed by a discussion in Section 5.

A Background on Professional Learning in Post-Simulation Debriefing

Maritime simulation practices are still poorly understood in contemporary research, and few studies target maritime debriefing practices as their focal point (Sellberg 2017). In addition, storytelling, to our knowledge, does not seem to be part of debriefing models, or a frequent topic in debriefing literature. Thus, this background draws mainly on research on healthcare education where there is a larger corpus of studies on post-simulation debriefing. In Section 2.1, educational guidelines that are identified as fundamentals for debriefing to fulfill its pedagogical aim of self-assessment and reflection are introduced (Sawyer et al. 2016). In Section 2.2, the focus shifts from educational guidelines to research on how participants practically and co-constructively accomplish assessment and reflection in debriefing. Our aim is to show and critically discuss some of the tensions between educational models and guidelines vis-à-vis empirical findings from studies of debriefing in practice.

Educational Guidelines for Post-Simulation Debriefing

There are several different approaches to debriefing, as well as models for structuring the process. In this section of the background, we focus on educational strategies that are highlighted as fundamental to foster discussion and reflection (Sawyer et al. 2016). These strategies include *psychological safety*, that is, a trusting and supportive debriefing climate where students feel free to share their experience without the risk of feeling judged, and *debriefing stance* (Sawyer et al. 2016). In the literature, positions are suggested for facilitators, ranging from a collegial position as a co-learner who facilitates discussion rather than provides answers (Fanning and Gaba 2007; Wickers 2010) to taking the stance of a subject expert, providing formative assessment and short lectures (Rudolph et al. 2007). The idea is to create balance between sending “confusing messages with a nonjudgmental approach” and threatening or embarrassing participants with critical feedback (Loo et al. 2018, p. 54). Loo et al. (2028) emphasized the

need for the facilitator to manage so-called “face sensitives” by avoiding accusatory language and to pay attention to transitions from one topic to another so that participants’ self-worth remains intact.

The fundamentals concern establishing a trusting climate for debriefing; the following educational strategies are directed toward addressing learning objectives (Sawyer et al. 2016). In the debriefing phase, the notion of students’ self-assessment is widely acknowledged as an essential aspect of learning from debriefing in the literature on simulations in healthcare (Fanning and Gaba 2007; Sawyer et al. 2016). The underlying assumption is that self-reflection encourages students to identify and address their own learning needs, and thus, take responsibility for their learning process. Furthermore, Sawyer et al. (2016) emphasized the need for a shared mental model, that is, the facilitators’ concern that participants understand the lessons to be learned, and several conversational strategies for gaining access to the students’ understanding. Advice in the literature includes asking open-ended questions and using silence to make room for participants to reflect, and to follow up assertions, observations or statements with questions (Sawyer et al. 2016).

The Practical Accomplishment of Assessments and Reflection in Debriefing

Although these fundamentals might work in theory, studies that examine the practical accomplishment of debriefing show discrepancies between guidelines provided in the pedagogical literature and empirical practice (Husebø et al. 2013; Johansson et al. 2017; Nordenström 2019; Sellberg 2018; Skovholt et al. 2019). These studies investigate, in interactional detail, how facilitators work to guide students in reflecting, evaluating and commenting on performance in relation to professional standards (Johansson et al. 2017; Sellberg 2018), and how students give formative assessments of their own or each other’s work or performance during debriefings (Nordenström 2019; Skovholt et al. 2019).

In the context of maritime debriefing, an assessment practice centered on facilitators’ use of visualization technologies has been described in the small, but hopefully growing, corpus of studies (Hontvedt and Arnseth 2013; Hontvedt and Øvergård 2019; Sellberg 2018; Sellberg and Rystedt 2019). Visualization technologies, that is, playback of the simulated scenario, provide a means for the facilitator to re-actualize and re-create the students’ previous performance, enabling participants to assess the students’ conduct. Focusing on student mistakes, the facilitator then provides demonstrations and rationales for preferred actions and behaviors in line with professional standards (Sellberg 2018; Sellberg and Rystedt 2019). Although Sellberg and Rystedt (2019) showed how the playback creates a shared perceptual field to which instructions are directed and navigational problems are elaborated, assessments of students’ conduct during simulations in previous studies were provided by the facilitator. This is in contrast to the debriefing guidelines proposed for self-assessments or self-reflections (cf. Fanning and Gaba 2007; Wickers 2010). The crucial role of the facilitator is also emphasized in studies of debriefings in healthcare. For example, Johansson et al. (2017) outlined assessment as a highly interactive process where the facilitator, as well as peers, plays a central role in guiding the reflections toward professionally relevant aspects of the

simulation. In particular, the sequential positioning and design of questions asked by facilitators, as well as follow-up questions, are important for focusing students' reflections on clinical practice and professional standards (Johansson et al. 2017). The importance of question design is seen also in Husebø et al. (2013). Using Gibbs' reflective cycle (Fig. 1) for analyzing the relation between facilitators' questions and students' responses, Husebø et al. (2013) found that few of the facilitators' questions seen in debriefing were formulated as analytic questions. An analytical question would elicit "deep reflection" and metacognitive processes. Instead, the facilitators asked descriptive and evaluative questions, which might have encouraged a "relatively superficial form of reflection," potentially leading to superficial learning (Husebø et al. 2013, p. 140).

How questions are formulated relate not only to the level of reflection in the elicited answers. As demonstrated by Skovholt et al. (2019), asking open-ended wh-questions does not necessarily occasion self-reflection or self-assessment as proposed (cf. Sawyer et al. 2016). Instead, asking questions to elicit self-assessment might align or come in conflict with conversational norms regarding assessments of one's own performance. In particular, Skovholt et al. (2019, p. 53) showed how participants answered positively tilted questions (e.g., "What did you do that worked well?") about their own performance with delayed and hesitant responses as well as laughter, avoiding self-praise in accordance with conversational norms. However, negatively tilted questions (e.g., "What could be done differently?") received direct and strong critical self-assessments. Even neutral wh-questions posed interactional problems in debriefings: Student answers were short and unelaborated, and the students seemed to resist assessing their performance. A possible explanation for this resistance might lie in the institutional roles

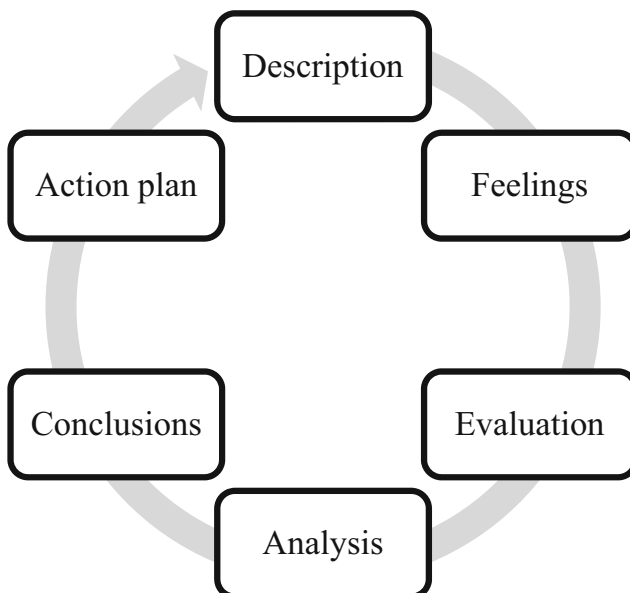


Fig. 1 Gibbs' reflective cycle, adopted from Husebø et al. (2013)

Excerpt 1

- 01 Facilitator 1: It was last summer, actually. Or this spring maybe, uhm so I made this epic trip I was about to say, with my boat to Gotland. To avoid a lot of sea I went very far north, and then I followed the coast down. Because I had seen it blowing quite a lot. But you know... there might be high waves and this boat did not bear that much. So, it can put on to it, but it rolled a lot... people puke and feel sick...
But even though it was not in the shelter of Gotland, it is still so that along the coast it takes ... because it is so shallow, it takes energy from the waves. And if you go really close, you can kind of ... well, it will be better. So I did.
- 02 Student 1: But not Costa Concordia near huh?
- 03 Facilitator 1: No, well, uhm right. That's what you don't want to do, but you want to ... You know, standing there. After all, I've been in that situation on a completely different boat. When you just wait and see, and you know it. Then it is important to figure out what ((inaudible)) and you know by then that at any time you can hear it start to crash and you can feel the boat slow down. It's no fun, really...
So of course, I checked very carefully, both on ECDIS and in the real chart, that ... And put on the sonar you know, so everything is clear when I do this. And that I have as much as possible ready. I know that along Gotland it is ... And it is right here along the west coast of Gotland it is a pallet edge. It means that it is deep, and then it simply becomes very shallow. Then it is like ... Yeah, maybe it can be ten meters, and then suddenly it is a cliff and then you can walk. It is not fun to drive with a passenger ferry there. You don't want to do that. "

of being an instructor or facilitator as opposed to a student. The students understand that the questions asked during the debriefing have a preferred or correct answer, and that it will be assessed by the facilitator as such (Skovholt et al. 2019). Although debriefing literature regularly promotes a psychological safe debriefing climate where students do not feel judged, instructions and assessments during debriefings are regularly provided by facilitators, and these assessments are critical. As pointed out by Nordenström (2019, p. 24), it is part of the expectations for instructors and facilitators to assess and correct students' work, and to provide them with "general and prescriptive recommendations for future actions." Thus, in the educational context, instruction, assessment and advice provided by facilitators are most often accepted by students.



Picture 4 The facilitator uses gestures to point out where and how his colleague crossed the TSS lane (top left) and to enact the story (top right and bottom pictures)

Research Approach

This study drew on data from video-recorded debriefings in the context of maritime education and training, focusing on storytelling episodes in debriefing. In this section, the analytical approach (Section 3.1) and the collected data, data selection and analytical process (Section 3.2) are discussed.

Analysis of Dialogue and the Inner Function of Stories

Storytelling in higher education takes many forms: Stories can be fictional, they can be based on personal experience or they might draw on retelling of others' stories, or of cases commonly known by participants who share a profession (Moon and Fowler, 2008). Thus, storytelling may serve many different purposes in higher education:

[A] story can capture the holistic and lived experience of the subject being taught, it can tap into imagination, emotions and form new and meaningful connections between existing areas of knowledge. Stories can work in the mind of students in the way that traditional lectures do not. It may sometimes be a vehicle to facilitate learning rather than impart knowledge [...] and is a valuable tool for the enhancement of reflective learning. (Moon and Fowler 2008, p. 232).

In this study, Labov and Waletzky's (1997) structural narrative model is used with a dialogical-performative analysis (Riessman 2008) to explore the specific and local meaning of stories told during debriefing sessions. Although both approaches focus on detailed analyses and comparisons of small samples of data, the structural narrative model is well-suited to analyze monologues. As pointed out by Bamberg (2012), the model deconstructs the story into its elements, but it is important to acknowledge that each part acquires its meaning from the whole story, and thus, should be seen as a function of the whole. In this way, the structural narrative model in Table 1 is used to investigate the internal function of stories told during debriefing (cf. Cortazzi 2014).

The use of dialogical-performative analyses in this study concerns turns of talk between participants to scrutinize what occasions storytelling in debriefing, as well as

Table 1 The elements of a story (adapted from Esin 2011, pp. 106–107)

Element	Function
Abstract	Clauses that summarizes the story, encapsulating the point of the story.
Orientation	Clauses that provides the context for the story.
Complicating action	Clauses that structure a series of events in the story.
Result	Clauses that reveal the end of the story.
Evaluation	Clauses that presents the narrator's perspective of the story. There are three different types of evaluation clauses: <ol style="list-style-type: none"> 1. External: the narrator steps outside of the story and tells the listeners the point. 2. Embedded: tells the listener how the narrator felt at the time of the event, without stepping out of the story. 3. Evaluative: report affective actions as part of the story.
Coda	Clauses that links the story to the present situation. These clauses open up for the listeners' reactions and comments.

the students' uptakes of the stories told (cf. Bamberg 2012). The questions explored through such analyses include "who an utterance may be directed to, when, and why, that is, for what purposes?" (Riessman 2008, p.105). According to Block (2008, p. 279), answering such questions means that the analyst must conduct an empirically grounded analysis, "focussing [sic] on the minutiae of interactions," of the background of the institutions, participants, identity and culture. Thus, the structural narrative model provides a theory-driven, top-down analysis of storytelling, while the dialogical-performative analysis means working bottom-up across levels of analysis. Combining different analytical approaches has been argued for to avoid decontextualization of the narrative, and to explore and integrate structural, linguistic and contextual aspects into a holistic understanding of storytelling (Riessman 2008).

Data Corpus, Selection and Transcription

The empirical material is part of a larger data corpus collected during a navigation course for second-year master mariner students during the autumn of 2014. The syllabus outlines learning objectives in the interrelated, albeit different areas of navigation. These areas include the proficient use of instruments on a modern, semi-automated ship's bridge, to navigate in accordance with the regulations that apply to traffic at sea, and to work together as the officer-of-the-watch and the lookout of a bridge team (cf. Sellberg 2018). The course consists of a combination of theoretical lectures on these topics, as well as practical exercises on a bridge operations simulator. The simulator-based training is organized in three phases, briefing-scenario-debriefing, all of which were video-recorded, aiming to capture the natural unfolding of events without disrupting the training activities, and to gather high quality data for close analyses of the educational practices that take place during training (cf. Heath et al. 2011). In all, approximately 60 h of simulation-based training were video recorded, using multiple cameras to capture activities that took place simultaneously. The material includes three training facilitators and four student groups, that is, a total of 40 of the 60 students taking the course.

The data chosen for analysis in this study contains 13 video-recorded and fully, but roughly, transcribed debriefings totaling four hours of video-recorded material. During preliminary analyses, 12 storytelling episodes were identified and chosen for further analysis. These episodes were subjected to structural narrative analyses, which gave an overview of the organization and content of the stories. In the next phase, a dialogical-performative analysis was applied to the episodes, to contextualize the stories told in debriefing practice. At this time, the transcriptions were revisited with attention to detail, to ensure that all that had been said had been reported verbatim, and with attention to discussions preceding and following storytelling. Therefore, the analysis was developed with information about the storyteller, the level of interactivity with the audience and the audience's reaction to the stories told. As a result, the inner function of storytelling in this particular debriefing practice was rendered visible (cf. Cortazzi 2014). An overview of the narrative analysis is provided in Table 2. In the next phase, the co-constructed story (Episode 10) and discussions that preceded and followed the storytelling were chosen for detailed, dialogical-performative analyses. At this time, the transcribed talk was elaborated with information on bodily positions, gestures, facial expressions and gaze to include bodily information important for understanding the

performative nature of these dialogues (cf. Heath et al. 2011). The results of the structural narrative analysis and the dialogical performative analysis are presented in the following section.

Analysis

The debriefings in this empirical case took place immediately after a simulated scenario had been completed, in a room next to the bridge simulators (Fig. 2). Overall, the debriefings were organized according to a so-called “laissez-faire” approach; that is, the debriefings were carried out without a particular debriefing model (cf. Nordenström 2019). Instead, the facilitators designed the briefing-scenario-debriefing with close attention to the learning objectives of the course throughout all phases of training (see also Sellberg 2018). To reconnect to the learning objectives of the exercise, the facilitator started each debriefing by providing students with a general review of how each of the five bridge teams performed during the scenario, using a PowerPoint presentation to connect to the learning objectives. After the general review, a playback of the scenario was used to revisit the specifics of the actions taken during the exercise, opening up for assessment and elaborated discussions of the students’ performance.

Taking a closer look at how the practice of storytelling fits into this debriefing activity, the structural narrative analysis amended with additional information about the preceding conversations and student uptake revealed prominent interactional patterns in the debriefing data (Table 2). In the following section, the creation of intercontextuality between the simulated experience and work at sea is analyzed further.

Connecting the Simulated Experience to Work Practices through Storytelling

In the following episode from the data, the story told by the facilitator was occasioned by a discussion of mistakes made by two students training together on a simulated ship bridge named *Cilla* (Episode 8 in Table 2). During the scenario, the students found themselves caught between two poor alternatives: either getting into a close quarter situation with another simulated vessel or running aground. During the debriefing, the events leading up to this situation were discussed further. Through the students’ jointly constructed account of their actions, it became evident that the students had problems knowing their exact position and agreeing on a decision about what to do in the situation. The indecisiveness led the students to try to conduct an evasive maneuver, at the same time as pulling full reverse, causing them to lose control of steering the ship. The students’ accounts of their actions are delivered with red faces and much laughter, signs the students were embarrassed by their mistakes (Fig. 3).

While the class laughs with the students on *Cilla*, the facilitator keeps a straight face and follows up with a story from his own experience of being captain on a passenger ferry. The transcription starts with an orientation clause, setting the scene in the spring earlier the same year, on “his” passenger ferry traveling from the Swedish east coast to the island Gotland (cf. Labov and Waletzky 1997). In line 01, the facilitator paints a picture of an epic journey, during which there are rough weather, strong winds and high waves, and the passenger ship rolls severely, causing passengers on board to feel sick and even vomit.

Table 2 The structural narrative analysis (with amendments)

Storyteller	Interactivity	Preceding talk	Abstract	Orientation	Complicating action	Evaluation	Result	Coda	Uptake	Inner function
1. Student	Monologue	Students violating COLREG	Framed as a question about work practices of a bridge team	Referring to his latest period of on-board apprenticeship	Crew members saying that one can join or cross a TSS lane in any manner	External	Open up for discussion on COLREG appliance	The student stop talking	Facilitator provides reasoning about different interpretations	Creating intercontextuality; face-saving
2. Facilitator1	Monologue	Students violating COLREG	Framed as a mistake in interpreting COLREG	Referring to a mariner navigating Dover Strait	No traffic in the Strait so the mariner took a short cut over the TSS-lane, violating COLREG violations and received a charge	External	Showing the complexity of interpreting COLREG in accordance with maritime law	Telling students that they performed better than they thought	Students initially resisting the idea that they did good, but eventually agreeing	Creating intercontextuality; face-saving
3. Facilitator2	Monologue	Students admitting missing to take positions	Framed as a story about work practices of a bridge team	Referring to his own work on board a passenger ship	Not taking positions on the chart, taking notes in the log book at different points along the journey	External	Showing how taking positions can be done in an ad hoc manner in the work practice	Leaving the topic, asking the students a new question	Student chuckles, nodding	Creating intercontextuality; face-saving

Table 2 (continued)

Storyteller	Interactivity	Preceding talk	Abstract	Orientation	Complicating action	Evaluation	Result	Coda	Uptake	Inner function
4. Facilitator2	Monologue	Students violating COLREG	Framed as a story about work practices of a bridge team	Referring to his prior work on board a passenger ship	Looking for other ships by visual lookout for lights and signals	External	Showing the importance of a visual outlook in confined waters	Asking a question about how this applies to the simulated situation	Student answering what would be a general good practice in such situation	Creating intercontextuality
5. Facilitator2	Monologue	Students violating COLREG	Framed as a story about other mariners' bad seaman-ship	Referring to other crews on ships in a specific coastal area	Following COLREG, but putting other ships in positions where they have to take evasive actions	Evaluative	Showing the meaning of bad seamanship in a specific situation	Ending the class for the day	Class dismissed	Creating intercontextuality
6. Facilitator2	Monologue	Students admitting having trouble identifying symbols in the nautical chart and	Framed as a story about the risk of running aground in shallow waters	Referring to another student group during a simulated scenario	Almost running aground when close to another vessel	External	Choosing between going close to other vessels or avoid shallow waters	Gives students praise for making the right decision given the situation	Approval from the whole class	Face-saving

Table 2 (continued)

Storyteller	Interactivity	Preceding talk	Abstract	Orientation	Complicating action	Evaluation	Result	Coda	Uptake	Inner function
7. Facilitator2	Monologue	becoming passive Discussion about navigating narrow and shallow waters	Framed as a story about the dangers of shoal heads	Referring to his own work on board a passenger ship	Using a sonar for keeping lookout on shoal heads but going over them sometimes anyway	Evaluative	Showing the consequences for the vessel when going over shoal heads	Leaving the topic, asking the students a new question	No specific reaction	Creating intercontextuality
8. Facilitator2	Monologue	Students describing their mistakes during the scenario	Framed as a story about the importance of knowing one's position and the depth of waters	Referring to a specific journey as captain on a passenger ship	Due to rough weather, the decision was made to stay close to the coast where waves are less intense, combination the use of nautical charts, ECDIS and sonar to avoid shallow waters	Evaluative	Showing the meaning of knowing one's position and the depth of waters means in navigational practice	Asking the students what take home lessons there are to be learned from this	Students collaborating to connect the specific situation to general "good practices"	Creating intercontextuality
9. Facilitator2	Monologue	Students describing their troubles agreeing	Framed as a story about bridge team	Referring to a specific journey as captain on	All bridge team members disagreed with the captain, who listened but	Evaluative	Showing an example of what assertive leadership	Asks to leave the topic, turns on	Laughter	Creating intercontextuality

Table 2 (continued)

Storyteller	Interactivity	Preceding talk	Abstract	Orientation	Complicating action	Evaluation	Result	Coda	Uptake	Inner function
10. Facilitator2	Co-constructed	on a decision during the scenario	decision making and leader-ship	a passenger ship	made the decision to follow his plan	External	may mean in practice	the play-back of the scenario	Students making jokes, laughter	Face-saving
		General discussion on how it feels when performing badly during simulation	Framed as a story about his own professional mistakes	Referring to his own professional career in general	Never running aground or collided, but have some "less successful" moorings", on his consciousness		Using humor to show that its human to make mistakes	Returns to the present situation by turning to the play-back of the scenario		
11. Facilitator2	Monologue	Discussing a student bridge team's aggressive driving	Contrasting between driving a car and a ship	Referring to driving his car in a specific trip	Describes a traffic situation where a truck is waiting to make a left turn when an aggressive driver cuts in front	Embedded	Showing the practical meaning of relaxed, generous and prestige less driving rather than simply following rules	Asking the students to elaborate on the problem of rule application	Student delivering a right answer, but not the answer the facilitator was looking for	Creating intercontextuality

Table 2 (continued)

Storyteller	Interactivity	Preceding talk	Abstract	Orientation	Complicating action	Evaluation	Result	Coda	Uptake	Inner function
12. Facilitator2	Monologue	Small talk before the debriefing starts	Framed as a story about a "chump"	Referring to an old colleague	The colleague never knew his position	Evaluative	Using humor to show that perfection isn't required	Turns on the play-back of the scenario	Laughter	Face-saving



Fig. 2 PowerPoint presentations and playbacks of the scenario are used to organize the debriefing session

To avoid the highest waves, the facilitator tells the students how he made the decision to go close along the coast of Gotland, as the shallow waters near the island would take energy from the waves, delivering the complicating action of the story (Labov and Waletzky 1997). One of the students (Student 1) delivers a comment about this decision, “but not *Costa Concordia* close huh?” referring to the 2012 grounding of the cruise ship near the Italian island Isola del Giglio, causing the death of 32 people. The facilitator leans forward toward the student, nodding, delivering the utterance “No, well... uhm... *right*” with an emphasis on “right,” indicating that the student just touched on something very important. The facilitator continues to the result clause by explaining that to avoid going aground in these shallow waters, one must use the equipment on the ship’s bridge (cf. Labov and Waletzky 1997). Consequently, at all

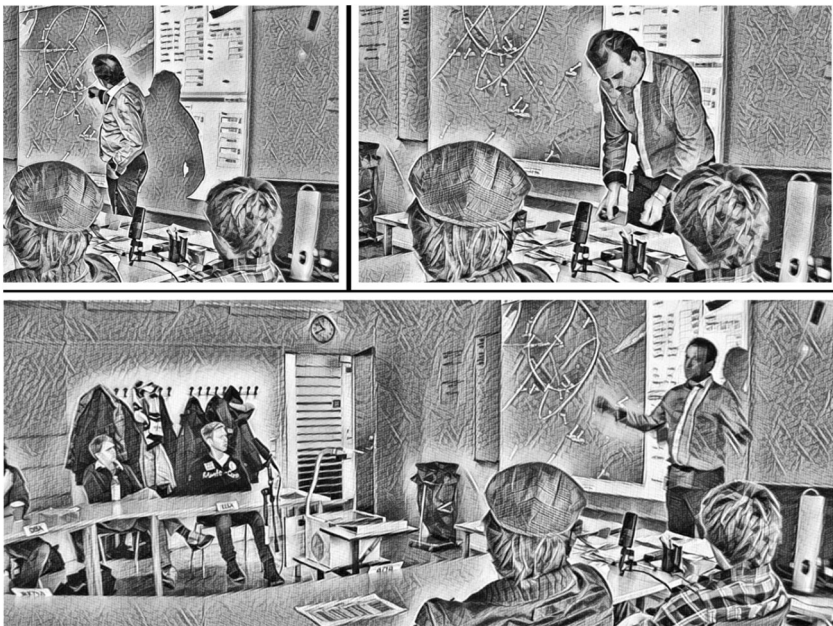


Fig. 3 Students on the bridge team *Cilla* laughing while accounting for their mistakes during the scenario

times you will know the exact position of the vessel as explicated in line 03: “So of course, I checked very carefully, both on ECDIS [Electronic Chart Display and Information System] and in the real chart, that ... and put on the sonar you know, so everything is clear when I do this.” Although there seem to be several reasons for the *Costa Concordia* disaster, the facilitator’s description of how to avoid going aground relates mostly to one of the navigational errors made: Captain Schettino turned off the computerized navigation system on the ship’s bridge, and was navigating only by visual outlook on the environment. The *Costa Concordia* case can be seen as a “known” story, that is, a story shared by participants in the professional context of maritime navigation, and can be helpful for participants to “see the bigger picture” (Moon and Fowler 2008, p. 236). In this example, it is interesting that the reference to *Costa Concordia* is delivered by a student, whose comment serves as a contrasting case for the facilitator to differentiate between poor professional conduct and good navigational practices (cf. Sellberg and Lundin 2018). Moreover, the *Cosa Concordia* reference becomes an important recourse for the facilitator to connect the lesson to be learned from the simulated scenario, across his personal story and to other authentic situations, thus creating intercontextuality between them. In this part of the story (the evaluation clause), both stories are discussed from an external point of view: That is, the participants take an outside perspective and deliver a non-emotional account of the lessons learned from the stories (Labov and Waletzky 1997).

In the next talk turns, transcribed in Excerpt 2, the facilitator returns to the students’ mistakes during the scenario and the lessons to be learned to avoid similar situations in the future. Turning back to the present situation, through a clause referred to as a coda by Labov and Waletzky (1997), is opening up for listeners’ reactions and comments. In the first line, the facilitator opens up toward the students by referring to his own story as the first lesson to be learned, and asking what the second lesson is.

One student on *Cilla* (Student 2) delivers an immediate answer to this question (“do not pull or drive full reverse when doing an evasive maneuver”) referring back to the student’s previous account of the mistakes made during the scenario (line 02). The facilitator confirms and explicates that this will cause one to lose control of steering the ship. This shows that the answer produced by Student 2 is relevant and correct. However, the facilitator follows up by asking what the third lesson might be and open up for new answers indicating that it was not the preferred answer, that is, the answer that the facilitator was looking for (cf. Nordenström 2019). At this time (line 04), a student (Student 3) from another bridge team proposes “show intentions” in a low tone

Excerpt 2

01	Facilitator 2:	Yes, so that is lesson number one then... lesson number two?
02	Student 1	Do not pull or drive full reverse when doing an evasive maneuver
03	Facilitator 2:	Right you lose control over the steering when you do this... so... and then maybe lesson number three?
04	Student 2	°show intentions°
05	Facilitator 2:	What?
06	Student 3	° keep track of light signals °
07	Facilitator 2:	Yes, that you are aware of who you’ll meet

of voice. The answer produced, to show intentions, is an often repeated lesson in this navigation course; however, it is not applicable to this particular situation. Thus, the answer produced by Student 3 is incorrect. Rather than producing a response about the incorrectness of the student's answer, the facilitator treats this as something that is not properly heard, asking "what?" in the next turn (line 05). Following this, another student (Student 1) answers the question, "keep track of light signals," also produced in a low tone of voice. This answer, however, is treated as properly heard, and is ratified by the facilitator as the correct (and preferred) answer in line 07. In the account that follows of why one needs to keep track of light signals, the facilitator elaborates the discussion on knowing what kinds of vessels one encounters at sea.

The sequential positioning and design of the questions asked by the facilitator are interesting in this part of debriefing. Here, the facilitator is asking about the second lesson learned, i.e., an evaluative question (cf. Husebø et al. 2013). This question is immediately answered by Student 2, who learned by experience not to pull full reverse while trying to make an evasive maneuver. This answer is then evaluated as correct but not preferred by the facilitator, which causes the other students in the group to collaboratively look for the preferred answer. These answers, in turn, are delivered as short and unelaborated answers on better work practices (line 04 and line 06). Thus, instead of reflecting in a "deep" and "metacognitive" manner, making use of their existing experiences (Wiig et al. 2017), the activity between students becomes an activity of finding the right answer (Husebø et al. 2013, p. 140). It is the facilitator who adds accounts of why the suggested work practices are preferable (line 03, line 07), supporting the students' professional understanding of how and why difficult situations at sea can be handled in certain ways. In this way, the facilitator is assessing the students' answers, as well as providing them with "general and prescriptive recommendations for future actions" (Nordenström 2019, p. 24). However, it may be questioned whether the instructor's way of supporting the recitation and facts open up for students' connecting experiences and knowledge across contexts of learning (Wiig 2019).

Connecting Simulated Mistakes to Professional Responsibilities

The second storytelling episode takes place during a debriefing where the students simulated a crossing of the heavily trafficked Traffic Separation Scheme (TSS) of Dover Strait. Using the structural narrative model to analyze the storytelling approach, the debriefing starts with the facilitator making a round, asking each student bridge team an open question on how they think they did during the scenario. Most bridge teams deliver slightly positive but unelaborate answers to this question, for example, that they think it went "okay" or "good" (cf. Skovholt et al. 2019). However, the *Disa* bridge team stands out when the student in the role of officer of the watch (Student 1) answers that it went "really bad actually." The facilitator addresses this by repeating the student's utterance "really bad?" posed as a question. Student 1 confirms this strongly negative self-assessment with "yes." The facilitator comments on how everyone thought it went well except *Disa* when the general review of the scenario started, turning toward the PowerPoint slide with "well, let's see," leaving the matter of who did well and who did not open for discussion. In contrast to the literature on healthcare debriefings, which recommends a "non-judgmental" approach and managing face

sensitives by avoiding accusatory language, the facilitator actually frames this activity as passing judgment (Loo et al. 2018). For example, in his following talk he asks the students three questions, directly following each other: “Did you show intentions? Is there anyone who didn’t and wants to confess? *Ada*?” One of the students from bridge team *Ada* answers “a little bit like that,” admitting (or confessing) that their intentions was not as clearly stated as they should have been according to The International Regulations for Preventing Collisions at Sea (COLREG) § 10.

Going back to the students on bridge team *Disa*, the problems that made them refer to their actions during the scenario as “really bad” become topicalized in greater detail when the facilitator starts the playback of the scenario. The facilitator follows each vessel’s movements on the playback, pairing his gestures toward the map with verbal explanations of the unfolding events (cf. Sellberg 2018). In particular, it seems that the students on *Disa* (Student 1 and Student 2) made an evasive maneuver to avoid getting on a collision course with another crossing vessel. *Disa* then needed to turn back to her original course fast, to be able to go in behind and follow another vessel crossing the strait. However, the students on *Disa* plotted a buoy by mistake, realizing and correcting their miscalculation a bit too late, and missed their opportunity to go in behind and follow as they recovered from their mistake. This forced them to make a less preferable portside turn, and cross the TSS lane diagonally, rather than the 90-degree angle proposed by the regulations stated in COLREG. The discussion goes back and forth, involving several vessels and navigational technical aspects of crossing a TSS lane, to determine whether *Disa* complied with the COLREG regulations and how the students could have performed their crossing in a better way when one of the students (Student 3) asks a question: “But what does it look like in reality? Because I sort of thought that when I asked on the bridge the last time, they didn’t seem that aware of when one can cross and sort of like ‘no, one can connect or cross as one pleases.’” The facilitator answers this question with a technical demonstration of the different separation lines of the Dover TSS lane on the map as shown on the playback.

After this demonstration, the facilitator begins to tell a story about a Dover Strait crossing. The story is a monologue, starting with the facilitator framing it as a story about a colleague crossing the TSS lane. In the following orientation clause (Labov and Waletzky 1997), he recreates the particular details of this crossing by pairing the utterance “up here” with using his index finger to point out exactly where this crossing started on the map as seen on the playback of the scenario (Fig. 4, top left). The continuous utterance “drove like that” is paired with a movement of the hand, showing the course of the crossing made over the TSS lane. This use of the playback connects to previous studies on teaching COLREG in debriefing. As highlighted by Sellberg and Rystedt (2019, p. 230), the meanings of the rules of the sea are difficult to teach in abstraction “since every decision relies on an infinite number of contingencies that have to be accounted for.” The use of playback technologies during debriefing offers opportunities to portray rules in context, showing their practical meaning in specific situations, recreating the crossing from a precise point and at a certain angle.

In the next clause of the story, as seen in Excerpt 3, the complication action is presented (Labov and Waletzky 1997): “But they of course had control over that in Dover, sent fines to the ship-owners. And that’s not cheap.” In this instance of talk, “they” refer to the Vessel Traffic Service at the Dover Port Control, which constantly monitors the strait. When telling the results of the complication action, that the Dover

Excerpt 3

-
- 01 Facilitator 1 I had a colleague that once were up here, drove like that, and then it was no traffic. So he cut the lane diagonally. But they of course had control over that in Dover, sent fines to the ship-owners. And that's not cheap. And it was like, then he said "well, it's no traffic". No, but it's not written in COLREG like this "well, if it's no traffic then you can cut the lane diagonally". No, it doesn't say that. It says that you should cross as close to a ninety degree as possible. It says nothing about other ships and such. It's not for you to decide. However, if there are traffic you might make way. So if there is a boat, then you go diagonally...
-

Port Control "sent fines to the ship owners," his talk about sending fines is paired with movement of both hands from his chest, forward and outward into a wide movement, creating a metaphorical gesture to enact passing something forward (Fig. 4, bottom picture). In particular, one student (Student 3) shows a reaction to this enactment, forming his mouth into an oh, and leaning slightly backward into his chair, as if he was receiving the fines, playing along with the facilitator's performance. The facilitator continues enacting the story, now performing as the colleague saying, "Well, it's no traffic," as well as posing as someone responding to this remark: "No, but it's not written in COLREG like this 'well, if it's no traffic then you can cut the lane diagonally.' No, it doesn't say that. It says that you should cross as close to 90 degrees as possible." This is said while the facilitator is enacting flipping through the imagined pages of COLREG, reading the regulation straight from the book (Fig. 4, top right). The facilitator continues to deliver the evaluation clause of the story, showing that what is right or wrong in relation to COLREG is "not for you to decide." Here, as in the majority of the examples of storytelling in the data corpus, the evaluation clause is external rather than emotional; that is, the facilitator steps out of the story to highlight the point. Moreover, the statement "it's not for you to decide" displays a practice where students' judgments of right and wrong are subordinate to port authorities, or as in this classroom, subordinate to the authority of the facilitator given his expert position.

In Excerpt 4, The facilitator continues to explain about compliance with COLREG regulations regarding different circumstances when crossing a TSS lane, before summing up the scenario with a positive and general evaluation: "well done" (line 01). The facilitator then turns to the students on *Disa*, telling them, "I didn't think it was as disastrous as you proposed in the beginning." Student 1, the officer of the watch on *Disa*, answers before the facilitator even finishes his sentence, resisting this evaluation with "to- to not keep track of a mark uhm: that you uhm:." The mistake that caused the students to get into a series of events that ultimately led them to cross the lane diagonally is still, as in the beginning of the debriefing, perceived as poor behavior by the student. The facilitator then highlights that it was a "single mistake," showing how they recovered from the error by turning upward and back, again pairing his talk with gestures on the playback. At this time, he also emphasizes that he thought "it was very good" and they "did uhm: well to me" (line 05). Student 1 then replies that it "looked a bit better here than he thought it would" with a smile on his face. Student 1, as well as the other students, starts to laugh, and the facilitator seem relieved, saying "oh that's nice," displaying concern for the student's feelings, and emphasizes "it's good that we learn from such mistakes as well," which is confirmed by Student 1 nodding and the minimal response "uhm."

Excerpt 4

-
- 01 Facilitator 1 Well done... and Disa... I didn't think they were as disastrous as you proposed in the beginning
- 02 Student 1 [to- not to keep track of a sea mark uhm: that you uhm:
- 03 Facilitator 1 Yeah: it was a single mistake... but that the whole exercise was a complete disaster
- 04 Student 1 Uhm
- 05 Facilitator 1 Well: uhm: I think it was very good... so you turned up and back... did uhm: well to me:
- 06 Student 1 It looked a bit better this time than I thought it would do so
- 07 Students ((laughter))
- 08 Facilitator 1 Oh that's nice... it's good that we learn a bit from such mistakes as well
- 09 Student 1 Mm
- 10 Facilitator 1 And that we can share things like this... yes yes... we do not make the same stuff that Disa did... so... so little of what we do is good right... we share the good and bad here and learn from both things... or what?
- 11 Student 2 .yup.
- 12 Student 1 Uhm
- 13 Facilitator 1 .yup. Okay then .yup.
- 14 Student 2 .yup.
-

Similar to the use of video in healthcare debriefings, in the maritime debriefing the playback enables the students view their own conduct from a third-person perspective (Johansson et al. 2017). In this situation, getting a third-person perspective, as well as discussing the series of events together with peers and an experienced professional such as the facilitator, led the students to reconceptualize their performance, from “really bad” to “better than I thought it would [go].” Moreover, we can see how the student’s reconceptualization of the events leads to him smiling, and eventually laughing together with his peers, turning a negative experience into something laughable. We can also see how the facilitator stresses that mistakes are something to learn from, a statement that reoccurs during this debriefing practice. Thus, storytelling seems to do face-saving work, contributing to self-reflection, laughter and an atmosphere where mistakes are presented, discussed and opened up as learning activities.

A Facilitator-Centered and Critical Debriefing Practice

By conducting and combining methods for analyzing the inner function of narratives as well as the dialogical-performative nature of debriefing interactions, this analysis displays how storytelling in maritime debriefing, at least in the case examined, is situated within a facilitator-centered, hierarchical and critical debriefing discourse. The practice stands out in stark contrast to the “best practices” and “gold standards” found in the literature on healthcare debriefings, highlighting psychological safety through a nonjudgmental approach where the facilitator is positioned as a “co-learner” rather than taking an expert stance (Loo et al. 2008; Sawyer et al. 2016; Wickers 2010). Although it might be tempting to claim that the facilitators in the navigation course are doing it wrong, our ambition is to understand this debriefing practice in the context of maritime working culture. Maritime work practices, along with healthcare, are

hierarchical and rely heavily on experience and expertise, in safety-critical domains where errors might have devastating consequences for people and the environment. In particular, in the maritime industry, previous disasters are analyzed and critically discussed, and continuously shape maritime legislation to prevent future accidents. In this context, it is important to highlight that students are expected to be accountable for their mistakes during simulator training. Moreover, students are trained to analyze and discuss mistakes made, learning how to recover from errors and to avoid doing mistakes in their future jobs in the maritime industry. The analysis show how storytelling during debriefing provides a vehicle in this learning process by connecting the simulation to work on board a seagoing ship (cf. Wahl 2019). Offering various stories from the sea, facilitators use previous experiences from maritime accidents and mistakes as examples to discuss, connect and create new meaning in the simulator-based training as important resources for learning across work and academic maritime contexts.

Conclusion and Discussion

The analysis of authentic debriefing episodes displayed how the stories told during debriefings in most cases took the format of monologues produced by the facilitator. Thus, in relation to the debriefing literature, one may argue that the facilitators in this specific setting took an expert stance toward the students, providing them with formative assessment and short lectures (cf. Rudolph et al. 2007). The analysis also revealed how storytelling in the majority of cases was occasioned by critical assessment of students' mistakes during the simulation (cf. Sellberg 2018). Further, the analysis show how storytelling during debriefing provides a vehicle for professional learning by connecting the simulation to work on board a seagoing ship, that is, serving as a mean for creating intercontextuality (cf. Wijn et al. 2017). In sum, maritime debriefing in this particular context stands out as a facilitator-centered, hierarchical and critical debriefing discourse. The practice of learning from mistakes raises critical and important questions regarding psychological safety and a positive debriefing climate that need to be addressed in future research. While the structural narrative suggests that some of the stories told serve face-saving functions, such episodes could be analyzed further in future work to examine how critique is balanced with face-work during debriefings, examining the possibility that storytelling is used to create a psychologically safer debriefing climate. There is also need for research that explore how students experience a facilitator-centered and critical debriefing climate.

To our knowledge, few studies have been conducted on maritime debriefing, and even less literature was found on storytelling in debriefing. An explanation for this research gap can be found in the dominance of human factors research in safety-critical domains where simulations are put to use (Sellberg 2017b). Human factors are built on a longstanding cognitivist tradition of investigating learning as a mental endeavor, residing within the minds of individuals. Thus, learning outcomes of simulations or debriefings are often investigated through carefully designed experimental research, and hypotheses that reflect an almost deterministic view that certain technologies and educational models would have uniform effects (Rystedt et al. 2019). Because much effort is devoted to studying effects of debriefing interventions, assumed to cause

changes, the debriefing itself is largely dismissed. Consequently, as argued by Rystedt et al. (2019), the practice of debriefing is “black boxed.” The present study aimed to broaden the perspective and study professional learning as an interactional accomplishment between facilitators, students and simulator technologies in everyday debriefing practice. In this way, the present study contributes to fill the identified research gaps with detailed analyses of the practice of telling stories from authentic work situations after simulated exercises, to create connections between work and training contexts, thus opening up for creating intercontextuality (Wahl 2019; Wiig 2019). The present study contributes to the small research field of maritime education and training, as well as joining a small but growing body of research that accounts for the interactional complexities involved in professional learning, focusing on the practice of post-simulation debriefing in vocational and professional training contexts (Husebø et al. 2013; Johansson et al. 2017; Nordenström 2019; Sellberg and Rystedt 2019).

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