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After-action reviews: The good behavior, the bad behavior, and why we should care

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ABSTRACT

After action reviews have been a common learning and reliability intervention in organizations for decades, and though they have attracted the interest of scholars in recent years, researchers have yet to consider practitioner views of what makes these meetings more or less effective and to check their association with desired outcomes. The current multi-study begins by investigating what makes for good and bad after-action reviews (AARs) using an inductive approach and analyzing responses to open-ended questions about AAR attendee behaviors perceived as more or less effective by participants. Building upon Study 1, Study 2 focuses on the effects of good attendee behavior on desirable outcomes for AARs in high-reliability organizations (HROs). Self-reported data were obtained through online surveys (N = 311). As hypothesized, the first study found that when open-ended questions were posed to firefighters there was strong agreement on what is required to facilitate a good AAR and prevent a bad one. The second study found that conducting AARs provides a venue for team building and potentially enhancing the safety climate on crews.

1. Introduction

As the complexity of work environments increase, so does the importance of practical experiential learning (Carroll, 1995). High-reliability organizations' unique combination of intricacy, propensity towards hazards, and necessary team cohesion makes it particularly difficult for members to anticipate – and subsequently train for – all possible contingencies (Baran and Scott, 2010). An After Action Review (AAR) is a discussion of an event that enables professionals and colleagues with similar or shared interests to discover for themselves what happened, why it happened, and how to sustain strengths and improve on weaknesses for future incidents (United States Agency for International Development, 2006). Practical experience can be utilized by the facilitation of After Action Reviews (Morrison and Meliza, 1999).

Within some specific types of organizations, organizational members have learned how to manage error and risk in a way that has made them remarkably accident-free despite the inherent dangers of their respective industries. These organizations, known as high-reliability organizations, develop organizational practices that promote a higher attention to detail due to mindfulness, which is characterized by a greater focus on failure and avoiding oversimplification, among other features (Weick and Sutcliffe, 2001). Such a mindset allows individuals to collectively recognize and respond to error signals in their environments during the earliest stages of crisis development. One method used in these organizations to promote mindfulness and safety is the after-action review (Allen et al., 2010). More formal than a conversation, but less formal than an annual review meeting, AARs are a location where informal discussion between individuals can provide for enhanced learning and sensemaking in groups and teams (Scott et al., 2013). Previous research shows that simply holding AARs improves group safety climate (Allen et al., 2010).

Although plentiful research exists regarding AARs (e.g., Tannenbaum and Cerasoli, 2013; Morrison and Meliza, 1999; Rankin et al., 1995) and HROs (e.g., La Porte, 1996; Roberts, 1989; Weick and Sutcliffe, 2001) separately, considerably less work considers the impact of *quality* AAR behavioral content within the sphere of HROs (i.e., what people do and say during AAR meetings themselves separate and apart from meeting design characteristics such as self-directed vs. facilitated). Scholars emphasize the importance of post-incident discussion (i.e., AARs) that highlights strengths, weaknesses, and near misses and

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describes this communication as a key feature of safety cultures (Mearns et al., 2013).

A focus on the behavioral content of AARs and relationships between participant perceptions of that content and AAR outcomes is needed for reasons that are both practical and theoretical. First, practitioners (e.g., leaders who develop policy and training around AARs) may benefit from a systematic look at what end users of this intervention believe are functional best practices with regard to how people participate in AARs. This could provide guidance regarding how this intervention should be implemented (e.g., learning objectives for training of AAR facilitators and participants). Second, with regard to AAR theory, inductive analysis of the end user perspective on AAR content (Study 1), when connected analytically to quantitative measures of desired outcomes (Study 2), may not only provide heuristic insight into interesting gaps between theory and practice of AARs but also holds the potential for added theoretical direction regarding what antecedents and outcomes are likely to be most promising in future research. So far, the research available on these meetings links them to desired outcomes, including enhanced individual performance (Ellis and Davidi, 2005), group learning (Ellis et al., 2006), group safety norms (Allen et al., 2010), and the reduction of incident ambiguity (Scott et al., 2013). Given the unique constraints faced by HROs and their members, a look at behaviors in this context would add considerably to scholars' understanding of this powerful intervention.

The current study begins to fill this gap (i.e., the lack of research on AAR meeting quality) by undertaking a multi-study approach. In the first study, we investigate what makes for good or bad AARs using an inductive approach – analyzing responses to open-ended questions about AAR attendee behaviors perceived as more or less effective by participants. Research shows that behaviors in meetings indeed matter to meeting outcomes (Allen et al., 2010, 2014; Kauffeld and Lehmann-Willenbrock, 2012; Scott et al., 2013) but little is known from an end-user perspective concerning the behaviors individual participants carry out in after-action review meetings and how these qualitatively derived behaviors may relate to desirable outcomes of this type of meeting. Thus, study 1 aims to first identify the good and bad behaviors that end users subjectively believe occur in after-action review meetings, and study 2 seeks to assess in variable-analytic fashion whether those behaviors are actually associated with desired outcomes.

Reliability scholars argue that HROs not only have a unique structure but also members in HROs think and act differently from those in other organization types. HROs emphasize anticipation not just of expected events but also aberrant events that typically would not be expected. Because inexperienced workers are more prone to occupational injuries (Laberge et al., 2016), it is important to build such efforts into training protocols. Building upon this theory regarding the positive relationship between how people behave in meetings and the degree to which it matters to the outcomes of those meetings (Kauffeld and Lehmann-Willenbrock, 2012; Neininger et al., 2010) we use the results from the first study to create a measure of good attendee behaviors in after-action review meetings and illustrate its relationship to both meeting satisfaction and the development of group safety norms. Additionally, previous research showed that having more meetings makes them a more salient aspect of one's job thereby making them a more meaningful component of an employee's attitudes towards their job (Rogelberg et al., 2010) and positive outcomes such as performance and engagement (Yoerger et al., 2015). Thus, it is believed that the perceived frequency with which these meetings occur will moderate the strength of these relationships. The hope is that by first identifying the behaviors and using that information to develop a measure to connect those behaviors to meaningful outcomes, methodological triangulation will confirm that what happens in after action reviews matters.

2. Study 1: end-user prospectives on AAR content

One of the most promising ways to enhance the safety climate of an organization is to improve the way supervisors and employees communicate about events after the fact (Allen et al., 2010) and groups who effectively appraise events via interaction may be more likely to increase organizational effectiveness (Allen et al., 2014). Meetings are usually meant to serve several purposes such as exchanging information, solving problems, and finding consensus or making decisions (Leach et al., 2009), but in order for an organization that is team-based to be successful, it is paramount that employees meet for the purposes of trouble-shooting, decision-making, and to generate ideas (Kauffeld and Lehmann-Willenbrock, 2012), and in the case of AARs, these meetings are focused on a specific prior incident on which the participants collaborated. Although some scholarship has explored the end-user perspective on the behavioral content of meetings in general (Allen et al., 2012), this work did not focus on meetings about a specific prior incident, nor did it look at meetings in relation to learning and reliability. Thus, in the current project, it is important to first seek identification of behaviors that matter to practitioners in the AAR context of retrospective discussion and HROs.

We sought to obtain a preliminary understanding of what AAR behaviors seem to matter most by developing categories of AAR attendee behavior inductively from end user responses to open-ended survey items about "good" and "bad" AAR participation. Consistent with the inductive aims of study 1, these qualitative data were analyzed in an emic fashion that was intentionally grounded in the perspective and textual responses of study participants (i.e., people who actually participate regularly in AARs) rather than coding the data in a more traditional etic manner with an a priori coding scheme based on prior research that was either never intended for the study of AARs and/or was never grounded conceptually in the perspective of everyday AAR participants to begin with. The objective of this analytic approach was to develop a preliminary understanding of what regular AAR participants categorize as helpful or unhelpful in an AAR discussion so that these behaviors could be assessed in relation to desired AAR outcomes in the second study reported here.

2.1. Sample and procedure

To investigate the behaviors of attendees in AARs in an HRO context, we chose to examine data collected from active career (non-volunteer) firefighters within a large municipal fire department in the eastern United States. Work within the fire service involves frequent encounters with occupational hazards (e.g., extreme temperatures, toxic smoke and fumes, collapsing structures, etc.) and limited room for error. Many fire departments try to minimize accidents and injuries through AARs (Allen et al., 2010). Thus, the fire service functioned as an ideal setting in which to study AARs and relationships between their behavioral content and desired outcomes. With the permission of departmental officials, we distributed an electronic survey to departmental personnel; 119 (25.14%) participants responded to the survey. Most of the respondents were male (95.1%), Caucasian (92.6%), middle-aged (M = 36.08 years, SD = 7.86), and experienced in terms of years as a firefighter (M = 10.54 years, SD = 6.68). All respondents indicated that they had, at the minimum, completed high school, with a sizable portion reporting that they attended some college (63.4%) or completed a bachelor's degree (23.2%).