A Theoretical and Practical Evaluation of the U.S. Army's After Action Review Process

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ABSTRACT

The U.S. Army originated the after action review (AAR) process in the 1970s as an element of its revolution in training. The process was designed as a way for Army leadership to ensure that training exercises resulted in documented, standardized benefits for all participants. It was also envisioned as a means for achieving clear communications among trainees and between trainees and leaders. In the years that followed, a variety of organizations adopted the AAR process; in addition, the Army has refined the process and continues to use it today. However, questions have arisen about the degree to which current AAR practice achieves the philosophical, theoretical, and practical goals considered desirable by its early designers and proponents. The current paper describes a program of research designed to develop a theoretical model of after action review, and to observe and document whether current AAR practice is successful. Initial research by the authors led to a theoretical model of the process, referred to as the Integrated Theory of After Action Review (ITAAR). That model specifies several theoretical research areas that relate to AAR, including task feedback, team training, performance appraisal, and leadership. For the current initiative, the research team expanded the model to include influences of knowledge management and instructional technology. They also documented how AAR is being examined and utilized by influential researchers, applied organizations, training agencies, and the U.S. Army. A number of practical and theoretical concerns have been noted by researchers and practitioners, and this paper will specify the degree to which current Army implementations of the AAR procedure fulfill the theoretical and practical training goals espoused by training personnel. Furthermore, the authors will describe the results of AAR observations and will present conclusions relevant for future success in AAR implementation.

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INTRODUCTION

Researchers have for many years acknowledged provision of feedback as essential for efficient learning (c.f., Mory, 1992). Yet, the methods available for administering feedback vary widely, as does the consistency with which human trainers and automated training systems accomplish feedback administration. Unfortunately, failures to consistently and faithfully administer meaningful training feedback have led to poor knowledge retention, poor knowledge transfer, and a tendency among some to discount the importance of the feedback process (Goldstein, 1980). Some of these failures are undeniably caused by difficulties capturing meaningful data during the training event. However, more often, poor feedback stems from the intuitive design of feedback sessions and variability in feedback administration. Consequently, trainees who could benefit from proper feedback administration may adopt a cavalier or skeptical opinion of the importance of training feedback. The complexity of modern military missions and the necessity for seamless interaction of soldier team members requires that feedback be designed consistently and effectively, and that it be delivered to ensure maximal retention and task transfer (Baird, Holland, & Deacon, 1999).

Definition and History of After Action Reviews

The after action review is a reflective session that is designed to allow trainees to review prior training performance. The first official document to document rules for conducting AARs was published by Bosley, Onoszko, Knerr and Sulzen (1979). The philosophy of after action reviews is pedagogical. The sessions are not intended to be critical evaluations of performance so much as collaborative meetings held to enhance learning. Ideally, after action reviews should be conducted to focus on what was planned to happen during training, what actually did happen during training, why events unfolded as they did, and what might be modified during subsequent training or performance sessions. It is important to emphasize that after action reviews are generally conducted at the team level. Though individual after action reviews are possible, they are typically introspective and personal. Optimally, after action review sessions should be held as soon after training as is practical.

Following the Viet Nam war, the Army reflected upon its status; morale among troops was low, and battle missions had not progressed as intended (Darling, Parry, & Moore, 2005). Development of the after action review concept was intended to enable quality improvement consistent with the restructuring of the Army during the 1980s and 1990s. Subsequently, the after action review technique has been incorporated into training practice and is now a formal element of all training (Department of the Army, 1993). Most recently the Army published FM 6-01.1, titled Knowledge Management Section, which stresses the importance of the conduct of the After Action Review as an integral part of operations. Appendix B of FM 6-01.1 is devoted to a detailed discussion of the process for preparing and conducting After Action Review for use as a learning technique during operations (Department of the Army, 2008).

AARs in Practice

There is considerable variability with regard to how after action reviews are conducted in the field. Much of this variability reflects the complexity of the training situation. Many training sessions (particularly at formal, full-fledged facilities such as the National Training Center) may stretch for two weeks or more, as soldiers engage in simulated combat against thinking, flexible, creative opponents. Over that period, there are likely to be many iterations of after action review, from less formal "hotwashes" to more formal collaborative sessions.

An important element that contributes to the variability of the AAR implementation is the AAR facilitators (Keene, 1994). Each one may have a different philosophy about how best to approach the team, and

may have a different interaction style. Similarly, different facilitators may be more or less effective at stimulating discussion, leading participants, structuring the lessons, reflecting on planned goals, and synthesizing the lessons learned from the after action review. Trainees, themselves, also constitute a source of variability. Some groups function as a cohesive unit with a clear leader. Other groups may be relatively unfamiliar with each other, may have a less effective leader, or may suffer from internal strife or conflict. Ultimately, the AAR process resembles a sort of dance, where the trainees and facilitator must share responsibility for teasing out lessons learned from the training exercise. The music they dance to may represent the tempo of battle, the coordination with other allied teams, the awareness of overall goals, and the progress made toward the overall objectives.

Each of these issues has rendered the after action review a highly important but inconsistent and potentially unpredictable tool. The following quote from Peter Senge (2001) illustrates the first basic problem: *"The Army's After Action Review (AAR) is arguably one of the most successful organizational learning methods yet devised. Yet, most every corporate effort to graft this truly innovative practice into their culture has failed because, again and again, people reduce the living practice of AAR's to a sterile technique."* This suggests that the AAR technique is more than simply a process that is transferable across organizations and contexts. Rather it should be tailorable for the needs of particular groups who adopt it.

A second problem with current AAR practices is that they are frequently defined by practical constraints, rather than findings from behavioral researchers. AARs have been referred to as a self-contained substantiation of a broader knowledge management program. As such, they are designed with the overriding purpose of increasing knowledge gained. However, to realize the benefits that are possible from AARs, it is necessary to learn from researchers who have devoted their efforts to optimizing learning. Such researchers have published volumes devoted to curriculum design, practice, feedback and other theoretical concerns. Yet, too often the implementation of AARs caters to time constraints, leadership constraints, labor constraints, and monetary constraints. As a result, the value of the technique is distilled or eliminated altogether. As an illustration of these problems, DeGrosky (2005) highlighted several problems faced by Wildland Fire Agencies as they worked to incorporate the after action review process. Among the specific problems DeGrosky noted were following AAR technique without context, irregular use of AARs, practicing informal or unstructured AARs, engaging in unsystematic preparation for AARs, and not properly training AAR facilitators.

A third problem with the conduct of AARs reflects the theoretical grounding of the technique. AARs are meant to serve a pedagogical purpose: to enhance learning from experience. As such, their structure and function is likely reminiscent of a number of theoretical domains. Such domains may include mainstream psychology (particularly with regard to the optimization of feedback, training methodology, and the behavior of small groups and teams), education (especially curriculum development and the behavior of facilitators), instructional technology (as concerns the development and incorporation of methods by which performance data may be gathered and replayed to participants), industrial psychology (for the design of performance appraisal systems, the study of leadership, and the role of organizational influences), knowledge management (an interdisciplinary endeavor that reflects organization of curricular issues and their sequential presentation and mastery) and military planning and leadership. Previous attempts to understand and document the AAR process have represented only a subset of theoretical areas, or have avoided behavioral theory altogether. However, considering theory is necessary to avoid reinventing the wheel and to ensure that the AAR represents a flexible and powerful method for optimizing operational learning.

Because of the diversity of theoretical contributors to AARs, it has been difficult to formulate one master list of best practices. Rather, what is needed is a theoretical model that reflects the myriad of discipline influences, and that is flexible enough to apply to diverse operational circumstances. To date, few theoretical models have been proposed. Those that have been proposed suffer from lack of validation. Thus the irony: Even though AARs are meant to be the pinnacle of a "learning organization," there have been few documented attempts to specify the principles of learning or knowledge management to the conduct of AAR sessions.

Goal of this Research

The Army has expressed a desire to investigate their internal after action review process, to determine the extent to which that process adheres to principles documented and supported within empirical and theoretical research. Toward that end, the current

project represents an attempt to observe and evaluate after action review sessions conducted in U.S. Army units at the National Training Center, Fort Irwin, CA. The evaluation of those sessions is important, also, for validating the Integrated Theory of After Action Review proposed by Mastaglio, Jones, Newlin and Bliss (2007). To accomplish such a review, the AAR sessions should be evaluated according to how much they feature literature recommendations in the areas of performance appraisal, instructional technology, human learning, task training, team performance, leadership, feedback design, and knowledge management.

METHOD

Constraints surrounding data collection from active duty soldiers limited our ability to complete a true task analysis procedure. However, two forms of a questionnaire were developed according to conventional procedures for task analysis questionnaires outlined by Crandall, Klein, & Hoffman (2006). One questionnaire included items to be answered by military subject matter experts familiar with the after action review process. The other form of the questionnaire consisted of a checklist of items drawn from research literature concerning effective after action reviews (Mastaglio, Jones, Newlin & Bliss, 2007). The items on the questionnaire and the checklist reflected the theoretical structure of the Integrated Theory of After Action Review, developed by Mastaglio, Jones, Newlin and Bliss (2007). The observations that follow represent frequencies observed for each item on the checklist.

The specific checklist items included on the checklist and the ITAAR construct they relate to were as follows:

- Gives Individual Praise (feedback)
- Gives Individual Criticism (feedback)
- Gives Group Praise (feedback)
- Gives Group Criticism (feedback)
- Asks a Rhetorical Question (learning)
- Asks a Question Directed at the Group (team operations)
- Asks a Question Directed at an Individual (learning)
- Encourages Group Discussion (team operations)
- Engages in Lecturing or Instructing (leadership)
- Refers to a Performance Goal (learning)
- Discusses an Action Summary (feedback)
- Uses a Technical Aid (leadership)
- Uses an Example to Clarify a Point (leadership)

Following development of the checklist, the experimenters arranged to observe six 2-hour after action reviews at the National Training Center, Fort Irwin, California. AARs observed were at the brigade and company level. To minimize obtrusiveness, experimenters observed the after action reviews in a remote facility by video camera.

RESULTS

The first step taken to analyze the results was to ensure that the recorded observations were legible and intelligible, and that they were organized according to military unit. The experimenters attempted to observe a cross-section of different sized units, so that AARs reflected a diversity of unit sizes and experience levels. All units observed included on-screen groups of approximately 25 soldiers, representing ranks including upper level noncommissioned officers and commissioned officers. Within each group, one officer was designated as a battle commander (BC). This leader generally served as an intermediary between the AAR facilitator and the training group. In all cases, the target AAR was conducted mid-way through the National Training Center training rotation.

The observational data were then transcribed verbatim, and were organized according to valence (positive or negative examples of witnessed behavior) and ITAAR construct represented. Frequency counts were then tallied to determine how often similar observations were made of facilitators and group members across AARs.

General Insights

Because observed groups were military units, we observed a fairly strict adherence to chain of command. When questions were raised, they often were directed to or through the BC. AAR sessions were generally three hours long, with a break given at the half-way point. Without exception, groups were aware that the AAR sessions were being recorded for concurrent or subsequent review. This, along with the presence of commanding officers, may have served to restrict the volume and content of the questions and the flow of information.

The content of the AAR dialog occurred at a generally high level. Rather than specific comments, personnel verbalized goals generally which precluded targeted actions for remediation. Similarly, much of the commentary represented clarification of comments or

problem elements, not generation of solution alternatives. In cases where effective dialog occurred, it tended to revolve around emotional expression (e.g., trust, frustration or surprise). Generally, there seemed to be an abundance of raw data ("ground truth") from training exercise recordings. What was missing was summative or accurate evaluative commentary.

Facilitator Insights

At the beginning of our experimental observation period, we were informed that facilitators had been trained to conduct AARs. This was quite apparent, as facilitators tended to follow the same basic procedure. That procedure included introductory statements clarifying the purpose and pedagogical philosophy of AARs, listing of goals to be achieved during the AAR, presentation of open-ended questions designed to instruct (Socratic style), presentation of "ground truth" information designed to enhance soldier situation awareness and particular roles, use of technology media to encourage cohesion, presentation of individual awards, and encapsulation of goals for the subsequent training period.

Specific observations revealed that, as a whole, instructors appeared to be effective in accomplishing their goals. Nine positive comments indicated that they were generally organized, centered on performance improvement, willing to relinquish control of the session when appropriate (often to the BCs), willing to positively reinforce effective behaviors and constructively identify ineffective ones, apt to use personal anecdotes to illustrate pedagogical points, and fluent with technology use.

The four negative facilitator comments focused on tendencies to ask broad or leading questions, focusing on task issues at the expense of individual strengths or weaknesses, and directing comments to individuals instead of collective units.

Group Insights

In contrast to the facilitator comments, group behaviors were commonly judged more negatively. In fact, of the eleven observations that were judged to be universal across AAR groups, eight were negative and three were positive. The positive comments included group members seen as knowledgeable, focused on performance goals, and eager to provide input to the AAR process. However, these observations were outweighed by frequent indications that group members were passive (mostly listening and providing little input), deferent to rank, focused on personal blame, reluctant to criticize, and unwilling to interact with the visual aid technologies available. In addition, there were physical aspects of the AAR environment that hindered effective dialog. Those included high-ranking individuals consistently seated toward the front of the room and heterogenous rank representation within the AAR group. The net result of these aspects was that groups generally lacked social interaction, even when problem solutions required group interaction. In turn, this influenced facilitators to adopt a more directive, instructive presentation style.

DISCUSSION

Even though negative comments were observed for facilitators, groups, and in general, it is important to emphasize that the conduct of the AARs witnessed at Fort Irwin was generally effective. In fact, given the complexity of the tasks performed, the heterogenous nature of the groups evaluated, and the compressed time available for each review, facilitators were notably efficient as they organized the AAR sessions. Groups, too, were dedicated and responsive.

Accolades notwithstanding, there are several suggestions that, if implemented, could enhance the process and result in greater learning.

First, we observed that the physical environment was not well suited to promote group interaction. Group members were seated in rows, which discouraged them from lengthy or face-to-face interactions. Repositioning the furniture so that group members faced each other (such as in a circle), though a seemingly simple adjustment, could enhance social interaction and discussion. Another observation involved the use of technology in the AAR rooms. Though facilitators often used videos, the videos frequently bore marginal relevance to the content of the AARs themselves. It could be preferable (especially given Classroom XXI technologies) to provide the AAR facilitators with Smartboards to record notes, present ideas, or organize suggestions for individual or collective improvement. Doing so would allow ready conversion of notes to electronic format, thereby ensuring that a record was maintained for subsequent use.

The presence of the facilitator, though beneficial for record keeping and direction, at times seemed to stifle free exchange of information among group members. It could be beneficial to have the facilitator participate remotely, so that group members might feel less scrutiny during social interchanges.

Another suggestion might be to strategically position group members with position power (French & Raven,

1959) within the room, so that social exchanges might necessarily flow through them.

Theoretical Implications

One of the primary rationales for completing this research was to determine the acceptability of the Integrated Theory of After Action Review proposed by Mastaglio, Jones, Newlin and Bliss (2007). As noted earlier, that model proposes that the after action review process incorporates a number of psychological constructs, most of which have been studied empirically for decades and have established theoretical frameworks to guide explanation and prediction of behavior.

Generally, the model was supported by our observations. Specific points to indicate this are as follows:

- Observed behaviors of facilitators and group members within AAR sessions represented a considerable variety of constructual activity.
- Hypothesized supporting constructs were useful for discriminating between positive and negative behaviors of facilitators and groups.
- Proposed important constructs successfully discriminated between activities of facilitators (e.g., high on leadership) and group members (e.g., high on team activity).
- The importance of proposed constructs was confirmed based on the observed behaviors of facilitators and group members.

Future Research

The current research is only the first of several observations planned to investigate the U.S. Army's after action review process. As such, the observations were restricted to one installation and a narrow cross-section of AAR level sizes (brigade and company). Further work is necessary to determine whether the ITAAR model is similarly effective for representing the AAR processes representing other sizes and environments. It will also be useful to determine if the environmental variables discussed here will generalize to different styles of AAR implementation.

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