Research Requirement:

Training Platoon Leader Adaptive Thinking Skills in a Classroom Setting

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Executive Summary

The demands facing small unit leaders (platoon, squad, team) in the operational environment (OE) require that they demonstrate a high level of adaptability. Leaders must be able to adjust rapidly across a wide variety of operations. Achieving the necessary level of operational adaptability requires Army forces that are capable of successfully conducting both combined arms maneuver and wide area security within the context of joint, interagency, intergovernmental, and multinational efforts (TRADOC Pam 525-3-1, 2010). High operational tempo, increased uncertainty, cultural differences, a determined and resourceful enemy, and the need to constantly shift tactics and approaches are some of the key factors which have contributed to an environment where adaptability is required for mission success (Mueller-Hanson, White, Dorsey, & Pulakos, 2005).

Institutional courses such as the Infantry Basic Officer Leader Course (IBOLC) are tasked with providing new lieutenants with the fundamental knowledge and skills that will enable them to function effectively as platoon leaders in their first unit of assignment. Not surprisingly, the operational needs of units have impacted IBOLC course content. In addition, the need to rapidly fill platoon leader positions in operational units may shape how topic areas are taught, which will limit how content domains such as adaptability are addressed in these (institutional) settings.

The focus of this research was on designing effective and efficient module-based classroom training to enhance the adaptive/critical thinking process, i.e., to provide the basic knowledge, concepts, and skills that will provide the ground work for future learning in order to enhance the transfer of knowledge to novel situations (a key component of adaptability). More specifically, this research examined adaptability/critical thinking as applied to the mission planning and analysis process by revising relevant sections of an existing course module to enhance these particular skills. A problem-based training module was developed incorporating two instructional design features (contrasting cases and invention) plus a lecture used to enhance deep understanding of subject matter materials (Schwartz & Bransford, 1998; Schwartz & Martin, 2004).

Procedure:

Participants included 42 male second lieutenants who recently graduated from the IBOLC. Participants were assigned to either the experimental (n = 42) or control (n = 10) groups. Participants assigned to the experimental group were first briefed on the purpose of the experiment (i.e., to see how platoon leaders plan) and told they would be provided with multiple opportunities to practice the orders process. They then completed a demographic questionnaire and a set of individual difference measures hypothesized to be related to adaptive performance (general self-efficacy, goal orientation, metacognitive thinking, individual adaptability, Big Five personality, and intelligence).

The instructor role played the company commander and gave the area of operation (AO) briefing and company operations order (OPORD). The OPORD described an offensive mission. Each participant role played a platoon leader and was asked to write his own individual platoon order.

The participants then began work on their backbriefs, warning order (WARNO) and OPORD. After completing the OPORD, participants then received their first fragmentary order (FRAGO 1). After a predetermined time, the instructor provided a lecture which identified key conceptual points/differences between the OPORD and FRAGO 1 and their relevance to the planning process. Following the lecture, the participants received their second FRAGO which altered overall mission objectives and were given a set, predetermined time to update their order. When the participants completed FRAGO 2, the instructor conducted a brief discussion designed to highlight additional planning considerations implied in the second FRAGO.

After the discussion, the participants received the second mission/scenario (stability operation) which was very different from the first OPORD and served as the transfer task. The objective was to determine how well information provided in the lecture and employed in FRAGO 2 generalized (transferred) to the more nebulous stability operation, which was very different in intent from the first offensive OPORD. Transfer was assessed by having the participants respond to a set of written questions designed to assess how well they applied key planning concepts addressed in the lecture to specific planning considerations present in the transfer task. Finally, the participants completed a post-training questionnaire that assessed such areas as the participants' level of preparedness to discuss various aspects of the mission planning process, perceived utility of the training, and adequacy of time allotted for training.

Participants in the control condition were treated identically to those in the experimental condition with one exception. That is, they were exposed to the OPORD and follow-on missions, FRAGO 1, FRAGO 2, and the transfer task (contrasting cases) and asked to develop (invention) plans for the OPORD and FRAGOs or respond to specific questions about the planning process in the transfer task. The control condition did not, however, receive the tie-in lecture following FRAGO 1 which addressed key conceptual points and their implications in the planning process. The participants then completed the post-training questionnaire.

Findings:

The results showed that the full training intervention did not significantly improve performance as measured by mission planning dimension ratings on the OPORD, FRAGOs, and transfer task in the experimental group relative to the control group. Trend analyses for both

groups showed that approximately ninety percent (experimental: 93%; control: 90%) of the dimension scores (mission planning ratings) did not change from FRAGO 1 to FRAGO 2 (i.e., pre- and post- key training intervention). Approximately fifty percent (experimental: 49%; control: 50%) of the scores did not change from FRAGO 2 to the transfer task.

With one exception (weather analysis; control group significantly more prepared), the full training protocol condition did not significantly differ from the control group on level of preparedness for discussing various aspects of the planning process (i.e., mission analysis, terrain analysis, describing the enemy, and adjusting a plan). Further analyses of students' self-reports of the training received indicated that the control group's attitudes toward various aspects of the instruction (training utility, adequacy of coverage of the mission planning process, instructor's understanding of the content, time allotment, and class engagement) were generally more positive than those of the experimental group.

The pattern of correlations obtained between selected individual difference measures and task performance on this set of dynamic tasks was consistent with earlier empirical research relating these variables to training adaptive thinking skills. Of particular interest were the positive correlations obtained between trainee characteristics such as self-efficacy, metacognition, learning (mastery) goal orientation and the individual adaptability dimensions – creativity and learning with the transfer task which was designed to capture adaptive performance through the generalization of learning to a novel task demand.

One major factor limiting the impact of the training strategy was the brief amount of time allowed to conduct the training (one day). Other factors were identified which trainers/course developers must address if this training strategy is to be successfully employed in a military institutional classroom setting. These factors include: minimizing the time between the start of training and initial feedback, training instructors in the application of instructional design principles for optimizing learning and transfer, reducing class size to effectively leverage the impact of small group activities, and develop appropriate metrics for assessing learning outcomes in a timely and efficient manner. In summary, the findings indicate that revisions to both the instructional design and content of the training module are needed if PBL instruction is to be used successfully in the development of adaptive thinking skills in an institutional training environment.

Utilization and Dissemination of Findings:

The training strategy examined in the present research, while ineffective as executed in the training environment described, holds promise for training cognitive skills essential in the operational environment. However, this particular training strategy, and constructivist approaches in general, will require significant engineering to be successfully implemented in the institutional training environment under current course constraints and projected student throughput patterns. Selected findings from this research were presented at the 26th Annual Society for Industrial and Organizational Psychology Conference in Chicago IL, 14-16 April 2011.