

Training Adaptive Leaders

“train a performance – a thinking performance”

U.S. Army Future Combat System of Systems (FCS) planning documents specifically call out the requirement to “develop, through training and experience, thinking, confident, versatile, adaptive, and seasoned leaders at the tactical level required for the digitized, rapidly deployable objective force” (TRADOC PAM 525-3-90/O&O, 22 July 2002). Leaders must be trained to think clearly and accurately in future dynamic battlefield environments that will place high demands on their mental agility. If we are to routinely prepare leaders for future operations we must greatly improve upon today’s leader training and development methods. One solution that appears to be very promising is focused, deliberate practice in the area of battlefield thinking. When that training method was tested at TRADOC schools, students made dramatic gains in basic tactical thinking.

Adaptive Thinking

After years of study and reading, Army officers typically develop a good understanding of the elements of tactical decision-making. However, that knowledge alone, no matter how extensive, is not sufficient to produce good adaptive thinking. Thinking is an active process; it is a behavior one does with his or her knowledge; it is not the knowledge itself. To produce good military adaptive thinkers one must train a performance – a thinking performance – in much the same way that one trains any skilled, well-rehearsed, and extensively practiced behavior to enable expert performance.

In military terms, adaptive thinking has been used to “describe the cognitive behavior of an officer who is confronted by unanticipated circumstances during the execution of a planned military operation (Lussier, Ross, & Mayes, 2000).” The conditions in which the thinking task must take place are an essential and defining ingredient. The thinking that underlies battlefield decisions does not occur in isolation or in a calm reflective environment; it occurs in a very challenging environment. Commanders must think while performing: assessing the situation, scanning for

new information, dealing with individuals under stress, monitoring progress of multiple activities of a complex plan. Multitudes of events compete for their attention.

Deliberate Practice and Adaptive Thinking

It is a common belief that “practice makes perfect.” In almost any task, initial performance is characterized by inefficient and ineffective behavior. Repetitive performance causes behavior to become automatic; it is performed more smoothly with less effort and attention. In a complex activity like battle command, expert performance levels cannot be attained without relying on the automaticity resulting from past performance; battle command is far too complex to “think your way through it from scratch” under tough battlefield conditions.

But practice alone will only increase the level of automaticity of the tasks; it will not efficiently perfect the manner in which they are performed. It is also important that the behaviors that become ingrained conform to those of an expert - that they are the right behaviors. Thus, in deliberate practice, one must pay attention to how one performs and actively correct the manner of performance. A key component is quality coaching, as subject matter experts observe and guide students with regard to the expert behaviors. Practice must be repetitive enough so that the behaviors remain in the correct form, even when one stops consciously attending to them. Thus, while practice certainly tends to improve performance, the performance gains expected depend heavily on the composition of the training environment, the use of effective coaching, and the quality of feedback.

The study of tactical experts by ARI researchers has revealed a number of common elements to the framework of their thinking, called Themes of Battlefield Thinking. They represent the core of our adaptive thinking training. The themes are not intended to be a checklist, rather they are designed to support the deliberate practice

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of tactical thinking. It is not sufficient to simply memorize the eight themes and learn the questions that commanders must ask. In fact, the eight themes are already well known to officers at the tactical level. Despite that, the behaviors described by the themes are often not exhibited during realistic tactical field exercises. It is a performance that must be trained, not knowledge.

Themes of Battlefield Thinking

- Keep a Focus on the Mission and Higher's Intent
- Model a Thinking Enemy
- Consider Effects of Terrain
- Use All Assets Available
- Consider Timing
- See the Big Picture
- Visualize the Battlefield
- Consider Contingencies and Remain Flexible

Think Like A Commander and the Armor Captains Career Course

The U.S. Army Research Institute developed a training program called Think Like A Commander (TLAC). It uses cognitive battle drills to apply deliberate practice training concepts to battlefield thinking skills and allows officers to model their battlefield understandings, plans, visualizations and decisions after expert tacticians' thinking patterns. A computer-based version of TLAC, the Captain's Edition, was developed by ARI-Fort Knox and implemented in the Armor Captain Career Courses (ACCC) at Fort Knox to develop thinking habits in U.S. Army captains, and reduce the amount of time it takes to achieve higher competency levels of battlefield thinking.

The ACCC is responsible for training and professionally developing adaptive, self-confident combined arms leaders to command and perform battle command tasks in a full spectrum environment in an Army transforming to an Interim and Objective Force.

Captains in the ACCC received the adaptive thinking training using seven TLAC vignettes. Vignettes included probes that cue participants to critical pieces of information that support decision making. The goal is not just to develop a correct solution or decision, however, it is also to focus on the thinking and decision making process (i.e., how to think).

Development of Think Like A Commander for the Armor Captain's Career Course

The program was developed using sound instructional design practices and included current students and instructors in the development process. All materials were developed with small group instructors from the ACCC and included a user jury with students.

Figure 1. Think Like A Commander Main Screen



Students were asked to think about the situation presented and note items that should be considered before making a decision. After each student makes a list of key considerations, the small group instructor facilitates a class discussion and actively monitors performance, assessing adequacy and mentoring students with regard to the expert habits. During the class discussion, students are required to discuss and/or defend considerations. Class members discuss the second- and third-order effects related to actions students suggest. The final phase of the training meth

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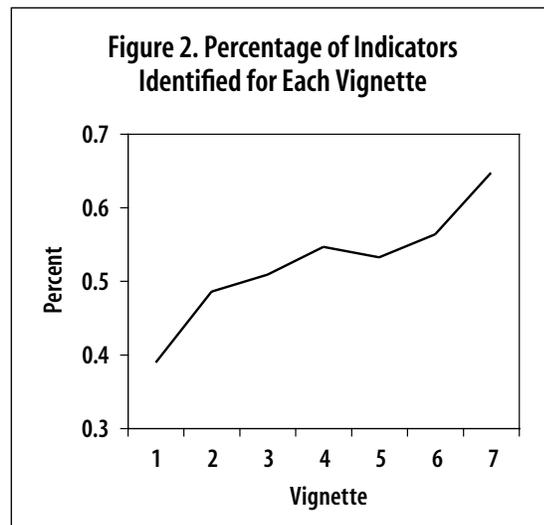
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ology allows students to evaluate their own performance. The students are shown a set of 10 to 16 indicators of expert thinking. The indicators are unique to each vignette. They are the critical components that expert battle commanders determined are important in the portrayed situation. The self-evaluation provides feedback on student performance and focuses the students' thinking on subsequent vignettes.

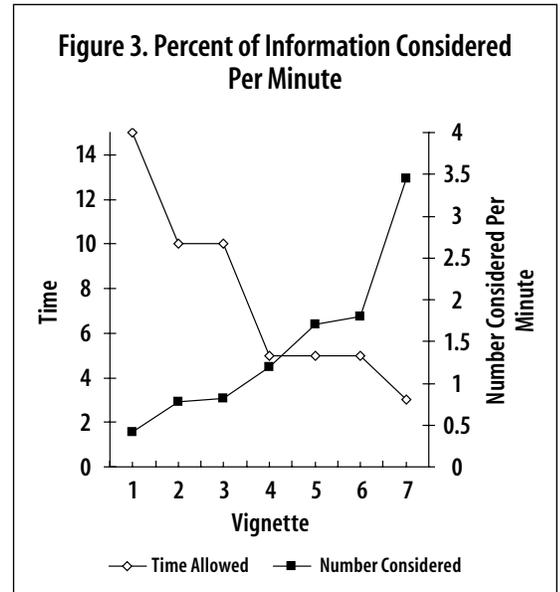
Evaluation of the Training

The training program provides for automated data collection of student responses and records the amount of time students spent on tasks. Performance data was collected for 24 students to determine: 1) if the amount of relevant information considered improved over repeated trials and 2) if the amount of information considered increased as time decreased over repeated trials.

The results? Students identified significantly more critical information as they progressed through the training. Figure 2 depicts the linear pattern for the percent of critical information identified for each vignette. As the figure indicates, the participants identified more of the key considerations as they progressed through the seven TLAC vignettes.



Remarkably, students were able to demonstrate the increase in performance under increasingly more difficult time constraints (see Figure 3).



Conclusions

Experience implementing the adaptive thinking training in the ACCC course curriculum suggest that adaptive thinking training is feasible and can provide a valuable learning environment for students. The data analysis suggests that the TLAC training application can accelerate tactical leader development in U.S. Army Captains. Further research will continue to improve the training and will examine whether the gains transfer to battle command performance in full-task tactical exercises.

For additional information, please contact Dr. Shadrick, ARI—Armored Forces Research Unit, AFRU@ari.army.mil.