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Outcome-Based Training and Education (OBTE) Integration Workshop— Final Report

*Confidence,
Accountability,
Adaptability,
and Problem
Solving.*

May 2009



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The Johns Hopkins University Applied Physics Laboratory

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Outcome-Based Training and Education (OBTE) Integration Workshop—Final Report

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Outcome-Based Training and Education (OBTE) Integration Workshop—Final Report

1. EXECUTIVE SUMMARY

Outcome-Based Training and Education (OBTE) is a philosophy of training and education that focuses on the holistic development of the individual. OBTE enables the student to master a subject, apply the subject appropriately, and synthesize it with other knowledge. The Johns Hopkins University Applied Physics Laboratory (JHU/APL), along with the U.S. Army Asymmetric Warfare Group (AWG), held an integration workshop on 5–6 March 2009 that brought together leaders, instructors, course designers, and others from across the Army, Joint, and Interagency communities to discuss OBTE and its implementation in current and future Army courses. The workshop combined calls for change from Army leadership with first-person accounts of OBTE implementation to demonstrate how OBTE meets the needs of the Army under Full Spectrum Operations (FSO). The workshop also explored the challenges posed by implementing OBTE principles, setting the stage for an improved *OBTE Implementation Guide*, and opening opportunities at both the implementation level and the leadership level for further integration of OBTE into Army training.

2. OUTCOME-BASED TRAINING AND EDUCATION

The Soldiers of today and of the future must be prepared for FSO. To achieve this, Soldiers must possess both the skills necessary to complete their missions and the problem-solving abilities to determine how, when, and why to apply these skills in theater. OBTE is a philosophy of Soldier preparation that equips Soldiers with necessary skills while promoting the intangibles that ensure combat effectiveness in FSO. This philosophy promotes the development of adaptive thinking, individual initiative, collective agility, and most importantly, confidence of participants in all aspects of training and education. OBTE enhances learning and encourages a more grounded understanding of complex topics in educational settings. It offers trainers and training developers a bridge to bring training and educational philosophies and practice closer together. Broadly stated, OBTE allows training and education to move beyond the minimalist approach of standards-based training and achieve the desired excellence and mastery that the Army's training doctrine envisions. It should not be viewed as a different approach from the current doctrine, but rather as an application of concepts associated with visualization of training purpose and goals.

2.1. Philosophy

In the context of preparing Soldiers for FSO, OBTE is best described as a philosophy of training and education that focuses on the total development of the individual in relation to his or her mission. Among many things, it develops:

- Mastery of the skills being trained,
- The intangible attributes required for success in FSO, and
- An understanding of the synthesis of these skills.

OBTE gives Soldiers the opportunity to understand and master fundamental skills and principles so they can apply their knowledge when confronted with a new situation.

The power of the OBTE approach is the development of intangible attributes that support and enhance the skill set expected by the Army’s operational concept of an offensive mindset. This development occurs when the leader expresses a training outcome that encompasses the approach. Similar to a commander expressing his or her intent in an execution order, the leader describes the broader purpose of the training, its vision, and its end state to

allow subordinates the latitude necessary to overcome obstacles and constraints to accomplish their mission.

OBTE gives Soldiers the opportunity to understand and master fundamental skills and principles so they can apply their knowledge when confronted with a new situation. The student is taught the “fundamentals” of a larger task, often through the introduction of a problem. The student learns to perform the fundamentals correctly in a very basic, low-stress environment and then progresses to more complicated environments that challenge him or her to adapt the fundamentals, now called skills. This type of approach allows the student to rapidly learn new skills or focus on correct performance in increasingly stressful situations, gives training educative properties, and offers deeper learning in educative settings.

The challenges of current and future conflicts in FSO exceed the military’s current capability to maintain training readiness that addresses every requirement at all times. A training approach that promotes active and deep learning is essential to enhance understanding and promote mastery of fundamental principles that have applicability across the spectrum of conflict. Soldiers and leaders require training and education that enables them to improvise and adapt their existing knowledge to unique circumstances in a variety of situations.

Low Crawl

*An important principle in the Basic Combat Training (BCT) course is to keep the Soldier safe in combat. An example used to illustrate the concept of an **outcome** (such as keeping the Soldier safe) in the workshop was the “low crawl,” a technique taught in BCT to make a Soldier less vulnerable to enemy fire. The question was posed, “When should the low crawl be used?”*

The rote answer given by attendees was “when the Soldier is under fire.” This was followed by a list of circumstances where it would not be appropriate; for instance, when the enemy has a significantly higher position, because a low crawl would expose more of the Soldier to fire and reduce his or her mobility.

The answer to the question is “when it helps keep the Soldier safe by making him or her less vulnerable to enemy fire.” Notice that this answer is not prescriptive but relies on the individual to determine his or her circumstances and act accordingly. Low crawl is one possible means of reducing a Soldier’s exposure to enemy fire, but it should be used only when it fits the situation. Ideally, training should focus on the outcome of making the Soldier safe, and training the Soldier to perform a low crawl becomes one objective of the training.

2.2. Background

The institutional change toward an OBTE approach is compelled by the realization that even though courses are defined by objectives, outcomes—as described above—occur in every training situation. Through deliberate design and informed delivery, these outcomes can be shaped to mold Soldiers into the adaptive, agile, and confident warfighters that the Army requires now and in the future. Ideally, learning *outcomes* define the broader purpose of training and education; they characterize behavioral aspects that should be evident in the execution of military missions or tasks. Learning *objectives*, on the other hand, are far more specific and correspond with observable actions that must occur to demonstrate that learning has occurred. Rather than defining a course by objectives, learning outcomes serve as the framework for course design. Objectives are still integral to curriculum design and measurement, but they are derivative of outcomes that consider the development of the whole Soldier.

Just as a commander in the Operating force must visualize, describe, and direct to effect battle command, a commander in the Generating force must visualize the desired result of the training and education activity. Current training doctrine relies upon Army-established standards for approximately 19,000 tasks that describe all of the activities and functions of Soldier performance in the various branches and specialties. Unfortunately, for any particular task, when an Army-established standard describes the minimum acceptable level of performance, that base standard is often interpreted as the objective of the training.

This performance floor is an essential requirement for the Army to be assured that Soldiers and units can, within certain constraints, accomplish missions in FSO. However, a performance floor is not consistent with either excellence or mastery, both of which are desired goals of Army training. Commanders require their units to demonstrate excellence—and they want their Soldiers to demonstrate the pursuit of mastery in the tasks that they routinely perform. A commander's expression of such an outcome becomes the starting point for designing training and education. The continual pursuit of mastery, including learning to learn, is critical because otherwise, it is unlikely that the minimum acceptable level of performance measured at a point in time will be maintained, let alone exceeded, when it is needed to accomplish a mission.

None of this diminishes the importance of applying and measuring performance standards for any task or skill that a Soldier is taught. It simply moves the focus of training from meeting the standard to developing the skill. Experience has generally shown that trainees tend to exceed the standard when it is not presented as the goal of the training. Additionally, the data show that those trainees who do not exceed listed standards benefit greatly from OBTE-influenced training. The fundamentals developed to surpass the standard have a longer-lasting impact than the single testing instance in which a trainee is able to achieve a given standard by luck or rote repetition rather than by a real increase in skills.

Experience has generally shown that trainees tend to exceed the standard when it is not presented as the goal of the training.

The Combat Applications Training Course (CATC) is one example of the application of OBTE principles to an Army training course. This course is used to teach Drill Sergeants and senior leaders new methods of training to develop the intangible attributes of a skill, specifically rifle marksmanship. By expressing the goals of the training as a desired outcome, allowing the trainee to learn by doing, supporting the trainees with timely and specific coaching, and creating

a learning environment where small initial successes are used to build fundamental skills, the course develops the intangible skills that are necessary in today's battlefield.

3. OBTE INTEGRATION WORKSHOP

3.1. Objective

AWG, along with JHU/APL, held a workshop on 5–6 March 2009 to explore the need for OBTE and the challenges that are associated with integrating this new approach into Army training programs. The goal of this workshop was to develop a more complete version of the *OBTE Implementation Guide*, a resource available to program managers, course designers, training developers, instructors, and others interested in applying OBTE principles across the Army, Joint, and Interagency communities.

Through firsthand accounts and testimonials, the Integration Workshop was designed to communicate the utility of OBTE to a wider audience. By exposing these training principles to a range of instructors, integrators, scientists, and Soldiers, the workshop revealed opportunities for broader application of OBTE. In addition, a set of breakout teams examined the specific issues of outcome design, instructor preparation, and evaluation. The results of these breakout sessions have already begun to inform the next version of the *OBTE Implementation Guide* and improve the integration of OBTE principles throughout the range of Army training.

5 Mar		6 Mar	
0900	Welcome/History and Mission of AWG—CSM Devens	0845	Opening Remarks
	The Army's Gap—CSM Cortes	0900	Implementation at Drill Sgt. School—SFC Case
	Outcome-Based Training and Education—LTC (Ret.) Cornell-d'Echert		Implementation in Military Science 300 Using ALM—MAJ Foster
	<i>Keynote Address</i> : Command Imperative for Change—BG (Ret.) Schwitters	0930	Breakout Group Topics—LTC (Ret.) Cornell-d'Echert
1145	Lunch		Evaluation Metrics
1300	Implementing Outcomes—COL Haskins		Identifying Outcomes
1345	OBTE Panel—COL Currey, LTC Butler, CSM Grippe, CSM James, Mr. Connolley		Instructor Development
	<ul style="list-style-type: none"> ● Establishing the command climate ● Vision for opportunity ● Regulatory or procedural obstacles 		Lunch
	Introduction to Breakout Groups—LTC (Ret.) Cornell-d'Echert	1300	Breakout Group Brief Backs
	Wrap-Up	1430	Workshop Wrap-Up and Farewell
Evening	No-Host Social at the Columbia Sheraton		

Figure 1: Agenda

Figure 1 shows the agenda for the 2-day Integration Workshop, which brought together over 125 individuals from more than 25 locations representing the Army, Joint, and Interagency communities who were interested in providing the best training available to warfighters and homeland defense personnel. The speakers and panelists at the workshop each had experience implementing OBTE principles into existing training programs, ranging from Basic Combat Training to Captains' Career Courses. The first day of the workshop began with a review of

current military training doctrine and high-level guidance by SGM Cortes and BG (Ret.) Schwitters. This review emphasized that the Army seeks to develop Soldiers who are more agile, adaptive, and confident, all traits that, as LTC (Ret.) Cornell-d'Echert explained, are promoted by OBTE principles. Next, COL Haskins described some of his experience implementing OBTE principles. He was joined by COL Currey, LTC Butler, CSM Grippe, CSM James, and Mr. Connolley in a panel discussion of issues and opportunities associated with OBTE.

Day 2 of the workshop began with two examples of OBTE implementation, one by SFC Case at the Drill Sergeant School and the other by MAJ Foster at the U.S. Military Academy. These were followed by breakout groups, each of which explored one of three specific OBTE implementation challenges: evaluation metrics, developing outcomes, and instructor development. The results of these breakouts were presented back to the full audience before the workshop wrapped up.

The workshop provided a lively and interactive forum for a broad range of people interested in training and education, from those who develop Army doctrine to those who are delivering courses to Soldiers on a regular basis. It generated several issues, opinions, ideas, and solutions that are detailed in the following sections. A set of themes also emerged as the presenters, panelists, and attendees gained confidence in OBTE principles. They include:

- The institutional resistance to change exemplified by current policies and procedures, including resource constraints and the metrics used to evaluate training effectiveness,
- The need for applied learning in classes that emphasizes using skills to achieve the desired outcome of an operation rather than disjoint task performance, and
- The need to develop instructors who understand both the skills that they are teaching and the application of these skills in the operating environment, so the course enables a Soldier to engage confidently in FSO.

3.1.1. Need for OBTE

The first workshop speakers provided intensity to follow-on discussions as they reviewed the military's pressing need for the type of confident and adaptive Soldier that OBTE can produce. A detailed review of current doctrine and command directives highlighted the strong, consistent call for these qualities in the battlefield and linked them to training and Soldier preparation. For instance, the introduction to Field Manual 3-0, *Operations*, released in February of 2008, states:

The high quality of Army leaders and Soldiers is best exploited by allowing subordinates maximum latitude to exercise individual and small-unit initiative. Tough, realistic training prepares leaders for this, and FM 3-0 prescribes giving them the maximum latitude to accomplish the mission successfully. This requires a climate of trust in the abilities of superior and subordinate alike. It also requires leaders at every level to think and act flexibly, constantly adapting to the situation. Subordinates' actions are guided by the higher commander's intent but not circumscribed by excessive control.

Additional passages from this and other Army manuals reinforce the call for adaptive, agile, confident Soldiers who can be trusted to operate on their own initiative to fulfill mission

Soldiers should be trained to achieve an outcome, not just perform a task in accordance with an isolated and prespecified standard.

objectives. This doctrine is supplemented by calls from Soldiers and commanders with combat experience and direction from the top levels of the Army to develop these skills through training. Significantly, this topic spurred discussion in the workshop on aspects of current Army training procedures that need to change. The gap between current methods and OBTE-influenced methods is real but hard to define, and it centers on the concept of

commander's intent. Training should take place as operations do, where Soldiers must adapt to changing situations to successfully complete their mission. To enable them to fulfill a commander's intent, Soldiers should be trained to achieve an outcome, not just perform a task in accordance with an isolated and prespecified standard.

Additional examples made clear what is expected of Soldiers: that they are confident in their abilities and are able to adapt to a full spectrum of operating conditions. The workshop then connected the requirements needed to achieve this capacity to the principles of OBTE. Training toward an outcome allows the trainees to adapt their actions to meet a variety of circumstances and gives them confidence in their skills, which will still be demonstrably at or above the Army standard and which will be necessary in FSO. The example of Battle Drill 6, an exercise concerned with entering and clearing a building, demonstrated that Soldiers and leaders must adapt as the enemy adapts rather than waiting for solutions to come down to them.

3.2. Experience with OBTE

As COL Haskins explained, improving training for Army personnel requires some examination of current methods to reveal opportunities for change. One training practice that has worked well in the past is an adherence to rules-based processes. Under stable operating conditions, predefined rules that can be taught and reinforced ensure consistency of performance. The current and future operating environment for troops, however, is not stable. Rather, it often requires Soldiers to be innovative in their methods while maintaining a focus on safety and fulfilling mission objectives. To meet this need, training philosophies need to change from rules-based to outcome-based methods.

To support this change, instructors must become more adaptive in their teaching techniques, and training policies, procedures, and evaluation methods must allow for flexibility in the use of time and resources. Courses should be designed to teach students not just what to do but why it should be done. While reinforcing basic principles to ensure the safety of students and those around them, courses should allow students to learn by doing, to make mistakes that are turned into teaching opportunities, and to strive for personal bests in skill attainment rather than aim for the minimal performance needed to achieve a standard.

The panel discussion brought together a wide range of leaders with experience implementing changes to training methods and curricula, giving workshop participants a chance to discuss the challenges and opportunities associated with OBTE methods. The panel started by talking about the intellectual challenges of integrating OBTE into courses. This centered on instructor preparation because instructors must understand both the philosophy of OBTE and the skills they are teaching to create the appropriate learning environment. Integrating the

philosophy of OBTE into courses is accomplished through a combination of instructor selection, training, and exposure to OBTE methods.

The panel also discussed how any task can be taught by using OBTE principles and contrasted this with the rules-based approach that is often used in Army training. Through several examples, the panel showed that the instructor allows the trainee to achieve an outcome through a combination of instruction, guidance, and practice. These methods are usually used in Army training, but by emphasizing the outcome rather than specific steps, OBTE principles teach both the skill and the reasoning associated with it so Soldiers can later apply these skills appropriately in the operating environment.

The panel spent some time discussing curriculum design and evaluation methods. One clear message was that the current curriculum design methods need to change to allow for OBTE. By starting with the desired outcomes of the training and working backward, courses can be designed at a high level to give the instructor guidance rather than detailed steps to follow. Detailed curriculum design is still useful both to highlight best practices and to demonstrate the appropriate resource requirements for the course. Such designs, however, should be guidance and allow for maximum flexibility for the instructor to ensure that the outcomes are achieved.

OBTE should not be used as a reason to request more resources. However, the resources generally available for training, including funding and time, need to be used at the discretion of the instructor.

As part of the wrap-up, the panel broadly discussed how to begin implementing OBTE principles. The first recommendation was to think innovatively when designing courses and providing instruction. This idea extended when the panel discussed resources. OBTE should not be used as a reason to request more resources. However, the resources generally available for training, including funding and time, need to be used at the discretion of the instructor. The overly prescriptive provisions that are currently used in training must be overcome. As an example, time on the firing range and the number of rounds available for marksmanship training is rigidly dictated without regard to the trainees or circumstances of the training. If the instructor is able to use the same funding and total instruction time but dole out the supplies, equipment, and range availability according to the pace set by him and his students, OBTE principles can be more easily implemented within the current high-level constraints.

Finally, and significantly, the panel and other proponents of OBTE were pressed to make the case for OBTE to top leadership. The concern of some in the audience was that until OBTE principles are reinforced from the highest levels, implementation will be ad hoc and incomplete. While reminding everyone of the doctrine and guidance that was presented regarding the desire of Army leadership for this type of training, many acknowledged that more direct emphasis is needed. Some possible solutions were mentioned, and proponents from AWG accepted the role of following up on these suggestions and continuing to push OBTE at all levels.

3.3. Breakout Group Discussions

Prior to the breakout group discussions on the second day, two speakers gave firsthand accounts of successes and challenges facing the implementation of OBTE principles in two different settings. First, SFC Case discussed his experience at the Drill Sergeant School. Preparing trainers is a key issue because instructors must master the skills being taught and be

able to mentor students through the course. Designing the course with the outcomes in mind allows the instructor to tailor the course to the students' needs and the training environment as necessary. Cost and logistics were pointed out as the key challenges. However, flexibility in the course design and use of resources can allow the instructor to overcome these challenges and provide demonstrably better training at the same overall cost.

Many expressed concern that the bureaucracy was so entrenched that any changes made would quickly be reversed when the training leader was replaced. This brought out the need for top-level support, and it re-emphasized the importance of replacing the current bureaucracy with one that is geared toward OBTE principles. By applying command guidance to set course goals, the Drill Sergeant School has committed the bureaucracy to designing and delivering training based on the key outcomes, where an emphasis on safety leads students to embrace personal responsibility and increases their confidence in the training. With these intangibles integrated into the training program, the success of the course yields further success and gives instructors a common theme for course design and execution.

The OBTE approach at West Point, as implemented in the MS 300—Platoon Operations course, was explained by MAJ Foster. This course is the final in a series of three military science courses taught at West Point and emphasizes small-unit tactics and leadership skills. A key to the modified course design is the use of tactical decision-making exercises (TDEs) as a teaching tool. These exercises allow students to learn naturally and interactively, rather than through lecture. For example, Boyd's OODA (Observe, Orient, Decide, Act) loop is a critical concept in the course that is taught *through* these exercises. However, the acronym and its definition are not presented until the end of the course, once the ideas are so ingrained in the students through exercises that lecturing on the topic is unnecessary.

MAJ Foster emphasized that support for change from above was critical to the success of this class. An important challenge faced in implementation was assessment, because TDEs are designed to have more than one acceptable solution. In fact, one outcome of the course is the ability to recover when a plan must change because of external forces. The so-called "house of cards" design of TDEs introduces disruptions, forcing cadets to react. This design also reinforces the idea that a flexible solution is preferable to a rigid but "perfect" solution. By introducing a number of quantifiable measures that capture the intangibles being taught, MAJ Foster demonstrated how to navigate the challenges associated with assessment.

With these presentations as an introduction, the attendees were broken into groups to facilitate deep dive explorations into three key topics: evaluation metrics, defining outcomes, and instructor development. The results of these breakout sessions are described below.

3.3.1. Evaluation Metrics

The evaluation metrics breakout group primarily focused on understanding how appropriate attributes are measured. Performance against standards is still of primary importance, but it must be evaluated in the context of the class and each individual student and must not be the limit of the evaluation. Under the assumption that any behavior that can be observed can be measured, the group discussed what should be evaluated. Primarily, metrics should enable evaluation of a Soldier's performance in combat, both the specific tasks and the associated behaviors. These metrics must be understood by trainees and leaders, and they should be defensible to an independent observer.

As part of the discussion of desired behaviors, the group talked about how the behavior of the instructor can influence the class. Whether intended or unintended, all of the actions and inactions of the instructor make an impression on the class. Because OBTE principles include hands-on coaching, instructors will spend some time in one-on-one training. Although this seems to benefit only a single student, this type of instruction is seen and noted by other students, who register both the task being taught and its importance as demonstrated by the instructor's attention. In terms of inaction, it was pointed out that if an instructor drops some topic from a class because of time or resource constraints, trainees will interpret that topic as less important.

The discussion of standards led the evaluation metrics breakout group to talk about resources. Once again, the fact was stated that OBTE does not require additional resources to obtain the same results as current methods. However, it was pointed out that OBTE principles are intended to provide better results than are currently expected from training programs, both in performance against standards and in increases in intangible attributes. This improvement is usually worth any marginal change in resources required to achieve it, so the outcomes of the training should be used to evaluate the appropriateness of the use of resources.

3.3.2. *Defining Outcomes*

The defining outcomes breakout group took a slightly different approach. The group was split into smaller subgroups to discuss different aspects of outcomes. This approach itself, allowing the groups to arrive at OBTE principles independently, was an application of outcome-based practices. The results showed a variety of thought and emphasis on defining outcomes.

The term *outcome* has a holistic meaning, and OBTE emphasizes a wide variety of desired attributes. These attributes are reflected in an independent-thinking Soldier emerging from OBTE intellectually, emotionally, physically, and tactically prepared for FSO. Among the many attributes used to describe a Soldier who has participated in OBTE, the ones that emerged as most appropriate are confidence, initiative, and accountability.

The term outcome has a holistic meaning, and OBTE emphasizes a wide variety of desired attributes. These attributes are reflected in an independent-thinking Soldier emerging from OBTE intellectually, emotionally, physically, and tactically prepared for FSO.

Some time was spent comparing outcomes to objectives. Simply stated, the outcome is the desired result of meeting stated objectives. However, training and testing solely focused on meeting objectives can be too rigid and tend to ignore the holistic development of the Soldier. Because this holistic development is often tied to intangible attributes, it is important to choose metrics carefully. Metrics must measure tangible

outcomes that lead to or indicate the presence of these important but intangible outcomes.

Instructor preparation was also discussed. Achieving acceptance of OBTE principles across Army training requires changes in instructor preparation. In particular, instructors must not only be exposed to OBTE concepts but also believe in OBTE as a philosophy and be willing to step outside of their comfort zone to implement some of the changes that are necessary. This increased responsibility for instructors must be accompanied by corresponding changes in course design. Ideally, the outcomes, both tangible and intangible, are defined at the outset. Then the course can be designed to allow students to achieve these outcomes. This style of course design

should provide guidance to instructors and reinforce objectives and outcomes rather than give specific instructions on course delivery.

3.3.3. Instructor Development

The instructor development breakout group began by discussing what instructors must understand to implement OBTE in contrast to what is taught in the Army Basic Instructor Course (ABIC). The challenge with this course is the limited time and the lack of responsibility and accountability being imparted to the instructors. The group believed that accountability and responsibility are the key principles in OBTE, and they are demonstrated when instructors are directed to assess students and adapt their courses to the students' needs.

The confidence of instructors in the OBTE philosophy must be reinforced to impart responsibility and improve learning. This is accomplished by exposing instructors to OBTE-influenced training, thereby convincing them of its value. Instructors should also understand the outcomes expected from the courses they teach and their importance, and have the authority to adapt course materials as necessary to ensure that the appropriate outcomes are achieved. This implies that instructors are given enough autonomy to make changes to courses and understand the course requirements well enough to achieve the appropriate outcomes. Therefore, more flexibility in the use of resources for the course may be required. The bureaucracy can and should be used to allow for this flexibility in an OBTE environment by focusing on outcomes and the well-defined course requirements that instructors will use.

4. CHALLENGES

Thanks to a combination of compelling speakers with firsthand knowledge of the theory and practice of OBTE and structured exercises designed to obtain feedback from training professionals, the OBTE Integration Workshop achieved its goal of uncovering a set of key challenges to overcome as part of OBTE implementation. First among these was the current bureaucracy, including the policies and procedures, resource models, and evaluation metrics. Evaluation methods were also highlighted in a different context, namely the overuse of standards as the central objective of many training courses rather than applied learning that develops the trainee holistically. Also addressed were the challenges associated with instructor development, somewhat related to resource availability but also pertaining to instructor ownership of the courses being delivered.

4.1. Existing Policies and Procedures/Resource Constraints/Army Evaluation Metrics

4.1.1. Discussion

While workshop discussions typically focused on successful OBTE implementation within the current bureaucracy, the primary concern going forward is overcoming the status quo. Implementing OBTE is perceived as a time- and resource-intensive task that is doomed to failure because too many aspects (course design, instructor preparation, training facility availability, evaluation methods, etc.) must change for OBTE principles to take hold. Much of this concern centers on the availability and use of resources. As a specific example, firing range time and

bullet supplies currently allocated for rifle training were cited as inadequate to fulfill an OBTE philosophy of training.

Similarly, the rigid structure of course design presents significant roadblocks to OBTE implementation. The prescriptive nature of Army training plans seems to focus too heavily on details that may be important but are not central to the skills being taught. Some examples mentioned were the implied importance of instructors pointing out the fire exits or the number of pencils available per student. The tendency to take a good suggestion for basic course delivery and make it a strict requirement forces instructors to follow training scripts perfectly with no regard for either the material or the needs of the students. This rigidity decouples the instructor from responsibility for the course and focuses the students on superfluous aspects of the training rather than on the desired outcomes, which consequently devalues the training experience.

This rigid structure also applies to the evaluation methods currently used. The singular focus of instructors and students is meeting the standard for a task. There is no perceived reward for exceeding the standard, but there is significant penalty for both instructor and student when the standard is not met. This setup reinforces the inflexibility of training by de-emphasizing any aspect of the course that is not focused on the final evaluation.

This combination of factors has the effect of freezing current training plans and discouraging any deviation, much less an overhaul of instruction according to OBTE principles. Evaluation based on performance of a specific task under presumed but not assured conditions requires an inflexible course with the sole objective of achieving the standard level of performance for all participants. Context, application, and integration of tasks and concepts that are not specifically evaluated are not addressed, so they are not valued. Thus, the outcomes of training become performance against a predefined test, rather than preparation for FSO in the battlefield.

There is no perceived reward for exceeding the standard.

4.1.2. Proposed Solutions

In an organization as large as the U.S. Army, bureaucracy is absolutely necessary. It must be harnessed to institutionalize OBTE principles both locally and Army-wide. This is especially important for continuity in training oriented toward OBTE principles. It is not enough to fight the bureaucracy. Instead, it is necessary to rebuild the bureaucracy to support the philosophy of OBTE. Part of this process is to use the doctrine and guidance to ensure that the goals of each course are written as outcomes, which may include both tangible and intangible aspects. Then course objectives should be defined on the basis of these outcomes so that a trainee's progress can be evaluated. The objectives can be used proactively to measure behaviors that indicate that the outcomes, whether tangible or intangible, are achieved. This not only reinforces the use of standards, it also gives them a whole new purpose in evaluating the Soldier holistically.

Once a course has been designed within the existing bureaucracy by using OBTE principles, the outcomes become more than just policy-driven goals; they serve as the instructor's guidance when adjusting the course to meet the needs of the students. They also allow the instructor to move away from treating the minimum acceptable performance level, as reflected in the standard, as the goal of the course. Objectives written with outcomes in mind allow the instructor to go beyond the standards to help Soldiers develop mastery of the skills being taught so they can perform at their personal best.

This vision of a high-functioning bureaucracy that supports holistic development of the Soldier is a worthy goal, but it was appropriately exposed as a long-term goal in the workshop. In response, several valuable interim goals and actions were suggested. One suggestion that has already been successful is to decouple the resources from the course plan. Giving the instructor a predetermined amount of time, money, and facilities, but not dictating their use, empowers the instructor to tailor the course to the needs of the students within the current constraints. This approach requires well-prepared instructors, as well as leaders who are committed to OBTE philosophy and are willing to empower instructors.

Another interim solution is to avoid training to standard by not presenting the minimum acceptable performance level as a goal. Anecdotal evidence shows that once the students have

... once the students have mastered a skill to their personal best, most will have surpassed the standard.

mastered a skill to their personal best, most will have surpassed the standard. Those that do not can then benefit from additional coaching that not only enables them to meet the standard but also emphasizes to the rest of the class the importance of the task or objective that they are learning.

A suggestion that applies both short-term and long-term is to enlist champions in the bureaucracy that support OBTE principles. These champions will often have a longer-lasting effect on the overall training program than individual leaders and trainers, who are more likely to rotate to different positions or locations relatively quickly. The champions who stay in the bureaucracy will enable or enforce OBTE principles in future training and will have the support of doctrine and guidance to help make the principles stick.

One dominant message conveyed at the workshop is that OBTE-type training does not require more resources. However, OBTE cannot succeed unless instructors are empowered to use the available time and resources as they see fit. The empowerment comes from Army leaders, through the doctrine and guidance surrounding training in the context of FSO. This doctrine also supports modification of course goals to include outcomes that develop the Soldier holistically along with objectives that ensure the Soldier is prepared for the mission.

4.2. Need for Applied Learning Instead of Training to Standard

4.2.1. Discussion

As OBTE principles are enacted, the practice of training to standard was seen as a significant issue to overcome. The workshop participants frequently brought up examples of standards becoming the sole focus of a course. When meeting standards is the course goal, course design and resourcing is built around achieving minimum acceptable performance rather than striving toward mastery. Instead, applied learning through training exercises is much more beneficial to Soldiers and enables the appropriate outcomes of the course.

This focus on meeting standards is driven by all involved in training. Trainees understandably want to meet the standard on the skill that they are learning because this often leads to additional Military Occupation Specialties (MOS) certification, giving the Soldier more flexibility and potentially better pay. Instructors are primarily evaluated on whether or not their students achieve the standard, so they have a great incentive to make this the focus of the course. Course designers are often given requirements centered on achieving the standards on the skills, so these become the course objectives because they are interpreted as the most important

outcomes. Leaders must justify the courses for which they are responsible, and hard metrics regarding student achievement of standards are not only easy to use, they are often the main measures expected.

However, each of these groups would accept—and usually prefer—training based on the application of the skills rather than just the demonstration of them in a controlled setting. Trainees need to perform tasks in operating conditions, and they need to recognize that the training environment is very different from the operating environment. When they are constrained by rigid policy and focused on ensuring that students achieve the standard, instructors are unable to use their experience to the fullest effect in the instructional setting. Course designers must confine their courses to the standards that are given to them as objectives rather than allowing for more natural learning in an operational setting. Leaders can guarantee only minimum performance instead of promoting the mastery of skills that they are directed to achieve in trainees by doctrine and guidance.

The key is to formulate the outcomes so they incorporate all of the objectives of the course, both the measurable skills that must be performed to standard and the intangible qualities that are being developed.

4.2.2. Proposed Solutions

Moving to an environment where outcomes are plainly stated as the goals of a course would mitigate many of the issues that lead to training to standard. This would give both course designers and instructors outcomes on which to focus, and it would allow them to integrate the skills being taught into practical applications. The key is to formulate the outcomes so they incorporate all of the objectives of the course, both the measurable skills that must be performed to standard and the intangible qualities that are being developed.

To enable applied learning, the course must be designed with practical exercises such as the TDEs used in the MS 300 course. Allowing for applied learning involves not only curriculum design but also flexibility in the use of training facilities so that skills can be demonstrated and practiced in a variety of situations. The exercises should also demonstrate when a particular skill might not be appropriate, to help students place the skill in the proper operational context.

One suggestion is to reveal the standard to the trainees only after the evaluation. This change encourages each of them to strive for their personal best rather than just to get by. It also allows the instructor to teach the skills in a variety of settings, because the trainees will not need to focus exclusively on the test conditions. The emphasis on skill development, however, cannot be diminished by de-emphasizing the standard. Rather, this approach places the emphasis on each individual to learn and perform the skill to the best of his or her abilities.

Using an applied learning environment directly addresses directives from top-level commanders to develop agile, adaptive Soldiers, but it requires support from leaders to allow instructors the authority to alter the training environment and to adjust the resources to fit the needs of the course and the students. This approach can require more one-on-one coaching to help low performers achieve the standard and to enable high performers to work toward mastery. This can shift the time and resource needs from the initial course design, so leaders must be willing to accommodate these needs.

Another suggestion to encourage applied learning is to have course designers begin with a short, one- or two-page description of the course outcomes. This document can be used to create

a specific training program, but it is primarily designed to be the course guidance for the instructor. When an instructor delivers the course, he or she should refer to this document rather than any script created by the course designer. The materials provided by the course designer must support the instructor in an adaptive teaching environment. This means that the course designer must provide a wider variety of materials that can be used as needed by the instructor to achieve the course outcomes. Although this vision requires a closer working relationship between the course designer and the instructor, it also allows for higher achievement by students and better understanding of both the design and delivery tasks of the course.

4.3. Instructor Development

4.3.1. Discussion

Because of the intensive nature of instruction under OBTE principles, instructors become central to implementation. In an OBTE setting, the instructor must be an expert both in the skills being taught and in the principles of OBTE. The individuals who deliver instruction are generally well-regarded and are expected to have both experience with and interest in the skills being taught. This provides a strong base upon which to build the type of instructor needed to implement OBTE principles.

Developing Soldiers holistically requires the instructor to understand when and how skills are applied. This means they must be able to realistically convey the operational setting to the students and demonstrate the skill and its application. The operational setting gives the instructor the opportunity to show how different skills are related and gives the student the context to understand the relative importance of the skills being taught, the necessary ordering of tasks, and the skills required for each task.

Instructors are encouraged by the existing policies and procedures to adhere strictly to the script provided in the course design. Because of the way they are evaluated, instructors run a risk by deviating even slightly from the script and can expect no reward for enhancing the course with their own experience or additional material. Similarly, all of the supplies and facilities for the course are dictated by the design, so even if they try to deviate, instructors are hampered by the policies of these supporting functions. In general, there is a strong disincentive for any change to the course design, much less any innovation, so instructors are encouraged not to think for themselves. Naturally, this makes an impression on trainees through both the actions of the instructors and the mechanics of the training system.

Giving instructors real responsibility for their courses and the authority to make changes gives them ownership of the course and allows them to invest in the trainees.

4.3.2. Proposed Solutions

Addressing the difference between delivering material, on which instructors currently focus, and enabling students to reach the course outcomes is the basic thrust of the proposed changes in instructor development. Giving instructors real responsibility for their courses and the authority to make changes gives them ownership of the course and allows them to invest in the trainees. Two key elements are necessary to achieve this goal. First, instructors must be prepared

to teach the concepts in the course so the objectives are met. Second, the support structure must be in place so instructors can make changes to the course as necessary.

One part of preparing instructors is to make sure they are masters of the skills contained in their courses. When a course is designed with a set of outcomes in mind, rather than just standard levels of performance, the contexts of learning and application are keys. Instructors must be able to teach students the skills and to adapt the training environment to enhance the application of the skills in FSO. An instructor must draw on his or her own experience and knowledge of others' experiences to create a learning environment where outcomes can be achieved. This requires an understanding of how and why the skills are used that goes beyond the rote delivery of material that is sometimes used.

The other part of preparing instructors is to familiarize them with OBTE principles. The shift in instruction methods that is required to achieve course outcomes is difficult for many experienced instructors because much more time and effort are required to set the context for the skills, rather than just ensuring that students memorize and repeat the steps required. For those accustomed to teaching to the test or otherwise focused on objectives rather than outcomes, this change can seem like a distraction from the purpose of the course. A two-part development system is suggested to help instructors adapt to OBTE principles. First, introduce OBTE through experience, by sending instructors through a course taught using an outcome-based philosophy. This experience was cited by many of the workshop attendees as "opening their eyes" to the benefits of OBTE. Second, instructors should be aware, through firsthand experience or institutional knowledge, of the challenges facing their students in the operating environment. Many of the strongest proponents of OBTE from within the Army are those with combat experience who claim that strong basic skills along with the understanding of the principles involved made them much more effective in the field because they knew both how and why to use their training. This kind of testimony emphasizes the importance of OBTE for Soldier safety and effectiveness.

Instructors must have the freedom to adapt their courses and the resource flexibility necessary to make changes. To achieve this, the way that instructors are evaluated should be changed to reflect the realization of the outcomes of the course rather than the achievement of standard performance and adherence to the precise directions provided in the course design. Instructors must also be given some authority over the resources they are using so that the owners of training facilities or supplies cannot override the needs of the students. This also means that instructors will be more aware of their responsibility for safety and budget. Instructors are already responsible for these aspects, but they may falsely feel that they are covered as long as they stick to the script. By making the responsibility and the authority more apparent, instructors can feel empowered to conduct the course according to the students' needs.

5. DESIRED OUTCOME

In consideration of both the nature of the Army's mission now and for the foreseeable future and the need to prepare Soldiers for FSO, a serious examination of training practices must be performed. Three important field manuals were released by the Army in 2008: FM 3-0, *Operations*; FM 3-07, *Stability Operations*; and FM 7-0, *Training for Full Spectrum Operations*. The Army's Training and Doctrine Command (TRADOC) is formulating policy and guidance to support this doctrine release, all of which must focus on preparing Soldiers to be confident and to adapt as necessary in FSO.

This momentum for change is an ideal opportunity to implement OBTE philosophy, which accounts for the needs of the Army as an operating force and the direction provided in doctrine. By approaching each course by first considering the desired outcomes, course design can focus on these outcomes and how they can holistically shape Soldiers for FSO. Newly developed course materials and resources can be made adaptable to the needs of instructors and students to allow for applied learning experiences through well-designed training exercises. Instructors can be empowered to adapt courses to the needs of their students, and they can be trusted to achieve the outcomes of the course. Students can then continue to develop into the confident, agile, adaptive Soldiers required in today's Army.

Key to this outcome is consistent support from all levels of the Army for OBTE and the way it helps develop Soldiers for FSO. Army leaders must accept and appreciate the adaptive, confident Soldier who can fulfill the objectives of a mission by appropriately applying the skills he or she has learned. This requires leaders to trust Soldiers to understand and commit to the mission, and it requires Soldiers to take responsibility for their own safety, their unit's safety, and the mission objective. In this environment, Soldiers can thrive and more fully implement FSO in all circumstances.

APPENDIX A: REFERENCES

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APPENDIX B: LIST OF ACRONYMS

ABIC	Army Basic Instructor Course
AWG	U.S. Army Asymmetric Warfare Group
BCT	Basic Combat Training
CATC	Combat Applications Training Course
FSO	Full Spectrum Operations
JHU/APL	The Johns Hopkins University Applied Physics Laboratory
MOS	Military Occupation Specialties
OBTE	Outcome-Based Training and Education
OODA	Observe, Orient, Decide, Act
TRADOC	U.S. Army Training and Doctrine Command
TDE	Tactical Decision-Making Exercises

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