Assessments

Why they matter in "closing with and destroying the enemy"
by LtCol Jacob S. Reeves

Introduction

To meet the challenges of the future operating environment, Marines must be better prepared than they have ever been. Specifically, they must have the intellectual edge necessary to make them the most feared warriors in those battles yet to come. The *38th Commandant's Planning Guidance*, published in July 2019, recognizes this imperative and identifies training and education as one of the five priority focus areas of the Marine Corps. The major theme under training and education is the necessity for the Marine Corps to transform from an Industrial Age training and education model to an Information Age learning model based on outcomes more aligned to our maneuver warfare culture.

21st Century Learning

It is not enough to simply implement new learning methodologies and consider the job done. Once in place, we must zealously and continuously assess these new programs to ensure we have them right, and modify or eliminate anything that does not enable our desired outcomes. To do this, we will establish a rigorous assessment process that will gauge the impact of learning on the force and ensure the effectiveness and efficiency of all our training programs. Specifically, this process will:

- Analyze the effectiveness of training and education outputs and provide readiness predictability.
- Identify and validate best practices or shortfalls across doctrine, organization, training, materiel, leadership and education, personnel, facilities. and policy (DOTMLPF-P) and effect corrective actions.
- Inform decision making and resource allocation.

>LtCol Reeves is currently the Analysis and Assessment Branch Head and Aviation Standards Branch Head at Training and Education Command. He is a former CH-46E pilot.

Simply put, the performance data will provide quantitative and qualitative evidence to the Marine Corps to help assess the effectiveness of their learning systems and pinpoint areas where corrective action needs to be taken or where positive trends need to be reinforced. The learning data collected from schools, home station training, and Service-level training events (SLTE) will help inform the collective impact on developing adaptive, decisive Marines and Marine units capable of critical effect, producing a more lethal force capable of fighting, surviving, and succeeding against peer threats.

The Rigorous Assessment Model

The rigorous assessment model is the framework by which distinct datasets across an individual's and unit's training lifecycle are assimilated to find trends through quantitative and qualitative analysis. Multiple nodes already exist which produce useful data. These include: initial accession organizations, formal schoolhouses to include PME, home station training, Marine Corps Combat Readiness Evaluations, SLTE such as the Integrated Training Exercise (ITX), and operational deployment after-action reports. These datasets, when analyzed, will inform not only the effectiveness of programs under Training and Education Command's (TECOM) purview but also trends across the DOTMLPF-P.

To perform these assessments, the Marine Corps must first develop a robust collection strategy and capability.
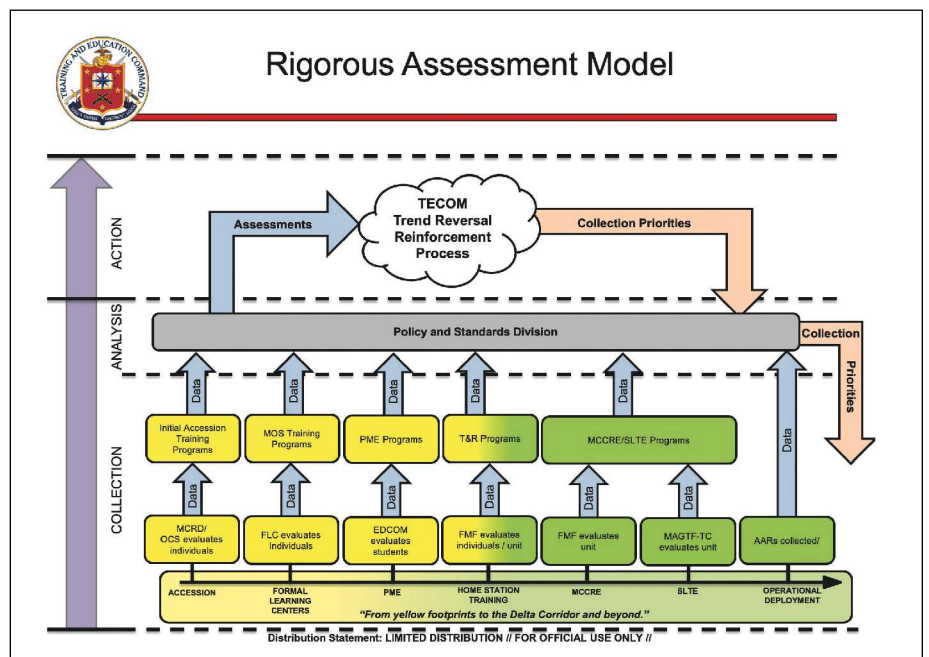

Figure 1. Rigorous Assessment Model.

While individual entities may already have their own individual collection plans and libraries, they are just that—individual. TECOM is exploring options for a central processing database capable of connecting these silos of data and establishing associated processes so they can be aggregated and analyzed. To assist with this effort, TECOM is pursuing hardware and software solutions that will allow rapid recording, collation, and storage of training and education data. The vision is that one day Marines will have the ability to record their critiques and observations from the classroom or field using tablets or similar devices. Performance data and notes, combined with structured data from instrumented ranges and simulators, will be uploaded automatically via wireless networks to a centralized database for follow-up analysis and assessment. To facilitate this vision, the groundwork for the next generation of the Marine Corps Training Information Management System is presently underway. Eventually, the Marine Corps Training Information Management System 2.0 will serve as one of the foundational technological support systems to manage, analyze, and assess most aspects of Marine Corps training.

In support of changes to both home station training and SLTEs, a new evaluation criterion is under consideration that will provide a greater level of fidelity over the current "trained/partially-trained/untrained" scale. A five point Scaled Performance Evaluation Measurement System will provide evaluators a wider range of measure (i.e., novice, advanced beginner, competent, proficient, and mastery) to better define a unit's performance level. Scaled Performance Evaluation Measurement System five-point grading scale is also designed as a tool for evaluators to turn observation and qualitative notes into quantitative scores. A more robust quantitative grading scale will provide data that can be used to correlate assessment information derived from the qualitative comments. The combined analysis of both quantitative data (such as Marine Corps Combat Readiness Evaluations performance data) with related qualita-

tive data (such as unit after-action report comments) can provide a much deeper analysis of proficiency and readiness issues. Research shows that moving away from a three-point scale would greatly enhance the reliability, accuracy, and predictive strength of current assessment. These changes will make the information more analytically significant, enabling a better understanding of the results and identification of potential causal factors.[1]

Mining and making sense of the large amount of data collected, as well as identifying trends and potential causal factors, requires human expertise coupled with technology enablers. At present, discovery of issues and trends requires a laborious manual review of data. In the future, artificial intelligence/machine learning will serve as a key enabler to assist in the timely

Eventually, the Marine Corps Training Information Management System 2.0 will serve as one of the foundational technological support systems to manage, analyze, and assess most aspects of Marine Corps training.

identification of trends buried in the ever-expanding volume of data. Artificial intelligence/machine learning may eventually be able to do in minutes what currently takes an individual days or weeks to accomplish.

Finally, it is not simply enough to identify trends. The true measure of success is our ability to effect corrective actions, closing the lessons learned loop. In this respect, TECOM will leverage subject matter experts and collaborative processes to analyze significant findings, associated causal factors, and provide recommended courses of action. These courses of action can then be formally tasked to appropriate organizations for implementation. For example, our training publications, to include training and readiness manuals, are moving to a much more responsive review process via an online collaborative environment. This new process would enable training

publications and training and readiness manuals to be updated quickly using identified trends. Throughout the process, TECOM will be able to track those actions through resolution.

Why the Rigorous Assessment Model Matters

Application of the rigorous assessment model will provide valuable information across the continuum from our individual Marines to our largest formations and senior leadership. Performance data lurks in every part of our training programs, just waiting for us to identify, define, and measure them to paint a comprehensive picture of the state of our programs and readiness of our Marines and units. Data collected from the recruit depots, entry-level schools, advanced schools, and training and education programs can provide

individual Marine performance data to be analyzed and assessed for program effectiveness in support of the rigorous assessment model. Unit performance data will be collected from various SLTE, such as ITX and Mountain Warfare Training Exercise, and eventually home station training events. Individual and unit performance results will be used to inform the larger-scale questions of training and education effectiveness, DOTMLPF-P shortfalls, and resource allocation.

Training and education effectiveness and readiness predictability. Analysis of training data will provide greater insight into the true health of the Marine Corps and improve our ability to assess unit readiness. The current use of the Defense Readiness Reporting System to report and assess unit readiness will be better informed by more detailed evaluation data available from SLTEs

and home station training. The combination of this data with the information contained in the Defense Readiness Reporting System will not only inform our understanding of individual unit readiness but also provide some predictive capability as to how that readiness might be impacted by future actions and training events. In addition, it will help to integrate the effectiveness of our various training and education programs and their effect on the readiness of the force. This level of accountability will enable us to offer transparency and visibility into how our programs are performing. As previously unconnected sources are assimilated, trends can be identified and backed with data, vice "tribal knowledge."

DOTMLPF-P shortfalls and corrective actions. While training and education will be the primary focus of the assessment effort, not all the trends identified will be restricted to this area. The rigorous assessment model will help illuminate strengths and shortfalls across the other DOTMLPF-P pillars. For instance, using old MOJAVE VIPER evaluation data combined with the unit demographics from manpower, and using its nascent process, TECOM was able to draw relevant conclusions regarding the effect of key leadership fill timing. As more units have their performance at ITX evaluated and reported, this type of analysis can be recreated using more relevant and timely data. This information, now data proven, could be used to influence the manpower model with recommended no later than dates for specific key leaders.

Furthermore, information collected over time can be used to identify both positive and negative Service-level systemic performance trends. Analyzing these trends will lead to a better understanding whether these changes are because of individuals (requiring improved training plans or local leadership) or organizations (necessitating an examination of systemic causes attributed to resource shortfalls or out-of-date policies or programs). Root causes can be identified by these trends and organizations responsible for those programs will help determine the best course of action to continue positive trends or reverse negative trends. This data will also enable us to compare multiple units, analyze units over a period of time, and assess the impact of revised actions. With the right information, the proper attention and resources can be applied to correct the shortfall. Ultimately, the purpose is the same: to learn from our successes and mistakes; and to develop, resource, and deliver quality programs that enable Marines and units to reach their full potential and maintain the intellectual edge in battle.

Inform decision making and resource allocation. Demonstrating return on investment is no longer a 'nice to have.' In addition to the Commandant's guidance to establish a rigorous assessment model, the need to collect data in order to conduct rigorous assessments has been growing for some time. While the Services continually vie for limited funds in the DOD budget each year, the Marine Corps has, at times, been challenged to fully articulate training fund requests through accurate linkages to readiness. The Commandant specifically directed us, as stewards of the people's money, to demonstrate the return on investment. In addition, Congress wants to know the return on investment, in relation to readiness, before increasing investments in desired military capabilities or re-allocating funds from competing priorities.

In April of 2019, the United States Government Accountability Office provided a report to Congress, titled, "The Marine Corps Should Take Actions to Track Training Funds and Link them to Readiness." The study found that "the Marine Corps lacks readily available data to assess whether funds were obligated consistent with their programmed intent and to adequately forecast and defend budget requests for training."[2] Marine Corps senior leadership and Congress need to understand where the greatest return on training and education investment lies, as it relates to readiness. The rigorous assessment model and process will go a long way to providing the needed assessment data, thus enabling the analysis necessary to show the connection from training and education to readiness, as well as to confirm that we are, in fact, accountable by actively monitoring to that end.

Conclusion

The Marine Corps is undergoing a significant change in the way we train and educate our Marines and units. We require mechanisms to identify challenges in learning and factors that have a direct impact on readiness. A rigorous assessment model will empower the Service to identify and address old and new performance trends; thereby, identifying and stopping formerly tolerated performance shortfalls, even if the causes are found to fall outside the training and education spheres. The time and effort expended to collect and report assessment data will help address problems affecting every Marine from the new recruit through senior leadership. Through analysis, the Marine Corps will be able to improve readiness by identifying Service-level performance trends at the unit level, thus tracing the cause of the deficiency. Assessments are necessary as the Commandant engages our national leaders on how we must train, man, and equip the Marine Corps in order to win not only against today's highly capable and lethal peer threats but to survive and defeat tomorrow's adversaries.

Notes

1. David Niemi, Eva L. Daker & Roxanne M. Sylvester, "Scaling Up, Scaling Down: Seven Years of Performance Assessment Development in the Nation's Second Largest School District," *Journal of Educational Assessment,* (Abingdon, UK: Taylor & Francis, 2007); and Garrett Loeffelman, "Developing a Scaled Performance Evaluation Measurement System to Evaluate Marine Performance," (master's thesis, Naval Postgraduate School, 2019).

2. Staff, "Ground Combat Forces: The Marine Corps Should Take Actions to Track Training Funds and Link Them to Readiness," (Washington, DC: Government Accountability Office, 2019).