



WHY LAW ENFORCEMENT
NEEDS TO TAKE A
**SCIENCE-BASED
APPROACH**
TO TRAINING AND EDUCATION

A digital report from the International Association of Directors of Law Enforcement Standards and Training (IADLEST) and its Partner Advisory Committee (IPAC)



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From the IPAC Committee

The mission of the International Association of Directors of Law Enforcement Standards and Training (IADLEST) is to support the innovative development of professional standards in public safety through research, development, collaboration and sharing of information, to assist states and international partners with establishing effective and defensible standards for the employment and training of public safety personnel.

In carrying out its mission, IADLEST created and regularly engages its Partner Advisory Committee (IPAC), comprised of 14 organizations that provide services to law enforcement and corrections officers and their organizations. Members of the IPAC help ensure that training and standards meet the needs of the public safety industry, help to promote the adoption of best practices and provide IADLEST with perspectives and recommendations regarding selected IADLEST projects and initiatives.

Members of the IPAC are deeply committed to supporting law enforcement and advancing the public safety profession with a vision of outcomes-based, and science-based police training and standards.

IPAC Members



PREFACE: The role of science-based training in law enforcement today

We have witnessed tremendous impacts on law enforcement in 2020. Recent events have sparked a nationwide debate on the role law enforcement plays in society. The debate is both heated and polarized and regardless on which side of the debate one falls, it highlights an increasing erosion of the public's trust in policing.

What is clear is that change is inevitable and already in motion. For any change to be meaningful and lasting, law enforcement leaders will need to look toward implementing a science-based approach that transforms the quality of law enforcement training and education in ways that contribute to lasting progress. The professional law enforcement officers of the future will need to be empowered with the skills, knowledge and abilities necessary to face the challenges ahead and forge deeper bonds with the communities they serve.

Today's law enforcement officers are overworked and expected to do more than ever; yet their training is often insufficient for the sheer breadth, complexity and danger of tasks they are called upon to perform every day. Neither the quality nor quantity of most law enforcement training is designed to ensure officers can function as agile, problem solvers who are attuned to the social, moral, ethical and legal implications of their decisions. Most officers receive less basic training than licensed barbers and, in most cases, are only required to complete on average 40 hours of in-service training per year. This training is often rote firearms qualifications or "check-the-box" policy compliance exams that neither predict nor prevent catastrophic failures, let alone measurably improve officer performance. Even when robust training is embraced, it is rarely tied to measurable outcomes and objective standards of evaluation grounded in science.

The series of brief papers that follow describe some of what can be done to implement a science-based approach to law enforcement training and education. These papers were compiled by the IADLEST Partner

Advisory Committee (IPAC), which is comprised of practitioners, technologists and researchers dedicated to raising the bar for law enforcement standards, training and science-based best practices. The members of IPAC believe law enforcement training can benefit from the rigorous learning paradigm that has long proven effective for other high-risk, high-consequence sectors such as healthcare, law, engineering, aviation and other

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licensed occupations where human lives rest in the hands of professionals whose ability to make accurate decisions under complex, dynamic conditions is critical.

We invite readers to consider how profoundly the quality and accountability of American law enforcement would improve if the necessary resources were invested to create a science-based training and education ecology that seamlessly leverages data to select, hire, train and evaluate law enforcement officers across the entirety of their careers. We acknowledge that such an effort is unprecedented in its ambition, yet nothing less will suffice to address the wider social demand for better law enforcement.

– *Ari Vidali*

How evidence-based training developed and evolved

The goal of evidence-based training is to research and then implement the best practices to create and sustain a functional officer

By Lon Bartel

“Of all the ideas in policing, one stands out as the most powerful force for change: police practices should be based on scientific evidence about what works best.”

– Lawrence W. Sherman

Twenty-two years ago, Professor Lawrence Sherman gave birth to the idea of evidence-based policing. Sherman believed that just researching policing practices was not enough and that proactive efforts were needed to put the research findings into practice through national and community guidelines.

His 1998 paper, [Ideas in American Policing: Evidence-Based Policing](#), became the core of evidence-based policing and presents a framework of thinking that is paralleled in what we call evidence-based training.

Evidence-based training in action

Evidence-based training involves implementing research and best practices to create sustainable and functional training that enables officers to meet the needs of their job tasks and, more importantly, the needs of the communities they serve.

When looking back nostalgically at old firearms training photos, we can immediately see how firearms training has evolved over the last 50 years. This is partially due to the influence of competitive shooters who innovated to obtain better performance. That innovation came from testing to see what was truly faster or more accurate. In the words of Wyatt Earp, “fast is fine, but accuracy is final.” Competitive shooters designed experiments, conducted research and made changes from findings. The “square range” allowed them to collect evidence that was needed to really evaluate human performance and how to enhance it. However, many realize that the “square

range,” like many sterile labs, does not always mirror the real world.

The invention of force on force technology allowed for an evolutionary step in experimentation and more realistic testing environments. Force on force technology allowed the use of role players to interact, requiring more from the participants than just shooting paper or steel. Another evolution was the development of high-fidelity simulation, of which some systems support wearable measurement devices. This allows for the measurement of not only external performance but also the internal process of cognition and physiology that takes data collection much further than seen in the past.

These changes allow for an experimental design that can collect the evidence needed to make the best choices of tactics and training methodologies based on the science of human performance and ability.

The barriers to evidence-based training

When it comes to training, law enforcement struggles with the push-pull of operational and budgetary requirements. The demands of answering common calls for service and specialized investigations drains a large chunk of resources that generally pushes training into a second-place position.

Training of officers can take them from their primary assignments decreasing the resources available to accomplish department missions. This push and pull includes substantial time commitments from officers and a financial investment in equipment and other training resources such as continued education for trainers, logistics (ranges, shoot houses), trainer prep time, etc. Purchasing updated training equipment may be

sacrificed because of a need for better operational gear. Agencies must often meet federal and state training mandates. These mandates are one of the pulls that take officers away from operational tasks, but they can also pull away from other desired or required training. This has led more than one organization to significantly restrict training and others to conduct what is known as “check-the-box” training, where the training is of low or questionable value but could be checked off on a list of requirements if the department is audited or called into court.

Adding to the complexity of the situation is a concept captured in the old saying, “The only two things people don’t like are change and the way things are.” This speaks to the resistance found in any culture/system to change; and training programs are often not immune to this. “This is the way we have always done it” is a phrase that often echoes in mat rooms, ranges and training centers. Change is hard, but in the struggle is where we grow, the challenge is where we bring out the best of us.

Unfortunately, culture makes changes to training paradigms difficult. Culture is more than a policy; a policy can change with the stroke of a pen, but culture may never change without the right influence and champions. Also, many state curriculums are governed by an administrative or political process that can make adjustments or change very challenging and labor-intensive.

Transitioning to evidence-based training

With all of the challenges mentioned above, here are some key considerations for a successful transition. First, when an agency makes the decision to embrace evidence-based training, it should be done correctly the first time otherwise you can undermine future attempts and waste valuable training resources. Early failures could fuel the negative attitudes of detractors creating a mindset of, “See, they don’t know what they are doing.”

Often, a leader is selected to spearhead these kinds of changes. Develop the right champions to push the cause. This leader must be well-trained and able to explain the “why” at the most basic levels.

The leader is only part of the equation. All trainers must be willing to adapt and change. Many times,



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training programs can be influenced by one of the 3 Ps: personality, preference and performance.¹ Trainers who have been in place for a long time may prefer to maintain the current process. Instructors unwilling to push for change can undermine efforts.

The goal of evidence-based training is to research and then implement the best practices to create and sustain a functional officer. This is done with a critical analysis of training methods and selecting the most efficient for creating needed and lasting change.

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How the science of human performance can accelerate skills development

Understanding the methods and processes that result in relatively permanent changes in a recruit's knowledge, skill and decision-making ability is critical for effective instruction

By W. Lewinski, Ph.D., and J. Robb, Ph.D.

Much of the science of how humans acquire, retain and use skills has not been systematically implemented in the police world. For example, in a review of state standards around the United States, it is apparent that the available or allotted training time and training budget strongly influence curricula. This article outlines relevant findings from skill development and decision-making research and how to use that information to create strategies for the successful instruction of decision-making required by police officers.

Skill development in police officers

Skill development and the judgment connected with their application is an essential foundation for all law enforcement officer practice. The professional application of assessment (interpreting situations), clinical decision-making, and then the successful application of learned skills is at the heart of professional law enforcement practices. Learning relies on a set of processes that, based on the techniques used, can result in improvements or even detriments in performance, learning, or both.¹

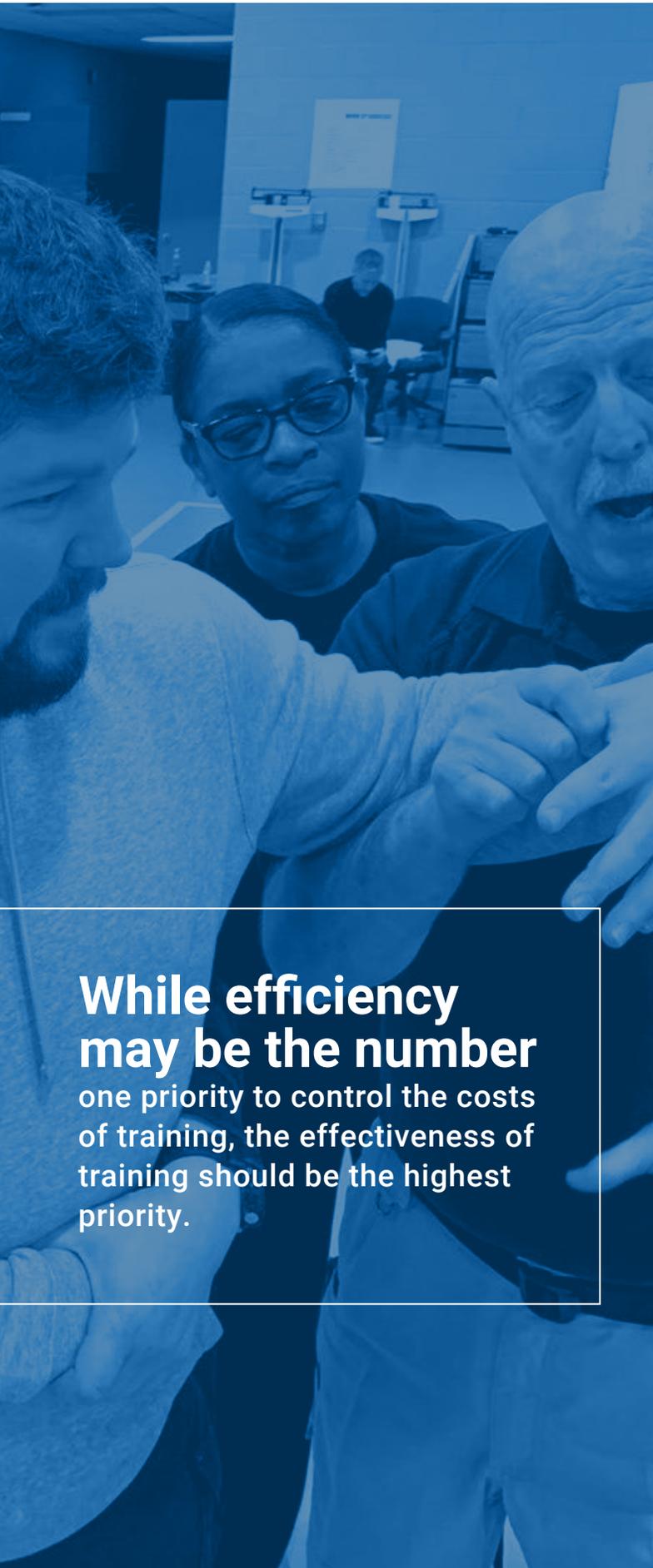
Officer training is expensive. While efficiency may be the number one priority to control the costs of training, the effectiveness of training should be the highest priority. Simply because a training program improves performance rapidly in no way indicates that permanent learning of the skills has occurred.^{1,2} Strategies often used in training that rapidly increase performance create “the illusion of learning” and result in the lowest level of long-term skill retention.^{3,4} The illusion of learning is created by focusing on “teaching objectives” and “performance standards” and doing it in a block and silo format. This is the antithesis of professional responsibility.

After graduation from the academy, officers are expected to have a keen assessment, and the ability to make complex decisions rapidly and perform myriad complex skills with near flawless levels of success in some of the most stressful situations, much like elite athletes.⁵ Yet academies provide only limited “learning” opportunities. The average basic or entry level training program is 60 to 80 hours of instruction in arrest and control skills or firearm skills. This provides only one-sixth to one-eighth of the training time of a high school athlete who plays one sport for four seasons. However, these officers are still held to extremely high professional and legal standards.

A recent study measured the acquisition of an elementary skill such as a baton strike taught to a “performance” level in block and silo format or chunked and independent of other skills. Performance levels, 16 weeks post-academy graduation, ranged from 24% to 48% or half the level at which they were demonstrated when performed in the academy.³¹

Training and learning of skills

When individuals first learn skills, they often do so by watching an instructor and then modeling their movements or behaviors.^{1,3,6} This obligates instructors to instruct in the fashion they wish the officer to model. During the practice of any skill, individuals then go through problem-solving processes to identify correct responses and form a memory of a successful program.^{3,6-8} How practice is organized will greatly impact the degree to which the information and skill are ingrained into a person's memory and subsequently the ability to apply the skill automatically. Automaticity is the ability of an individual to perform a professional skill with little-to-no conscious effort.⁸⁻¹¹ Automaticity is an ideal. It



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allows individuals to perform a response while leaving most of their attention and cognitive resources free to read, analyze and respond to problems.^{10,12,13} Think of how laborious typing would be if you had to think about every letter you typed instead of automatically typing the words or even the ideas about which you were thinking.

Training schedules can be organized in two basic formats: either a block or a distributed (variable) practice schedule. Block schedules require an individual to practice a singular motor skill repeatedly with little recovery time, breaks, or the practice of other related skills.^{4,7,12,14} Due to the short time intervals between long practice sessions and repetitive practice of a skill in this format, blocked schedules are often used for efficiency of training. This, partnered with data showing individuals improve in their performance very rapidly with blocked practice, has made this type of scheduling a preferred method for training organizations.⁶

Even in law enforcement training, “chunking” skills training into highly repetitive, siloed blocks is a favored method for academies and police departments all over the U.S.^{6,15} Unfortunately, a wealth of literature has demonstrated that block practice schedules, with little to no variability in the skills practiced, create the illusion of learning and result in the lowest levels of skill retention and facility over time.^{3,16,17} For instance, officers might practice a specific defensive tactic with partners in a controlled environment and with little variation or integration with other skills, with no real resistance and continually with the same partner who may even be matched for size and strength. While officers may then perform that specific tactic in a controlled environment very well at the end of instruction, a robust body of research has demonstrated that the ability of anyone to perform that skill in varied environments and in concert with other skills, such as communication, degrades significantly within a short period.^{3,18-20}

Foundational studies in motor control research have established that ideal practice scheduling for learning motor skills is variable, or distributed practice with variation and includes integration with other skills.^{1,4,12} Distributed practice schedules often have longer periods in between shorter practice sessions, which

are then extended over a longer period and taught in integration with other skills, such as are found in realistic professional applications.

One example of this type of schedule would be officers completing a 14-hour training on ground control tactics by attending one-hour sessions scheduled over three weeks, rather than attending two, 7-hour training sessions. Although this type of schedule takes longer for performance to improve, the longer period in between each session and the integration with a variety of skills have been shown to result in significantly greater retention and transfer of the skill itself in the long-term.^{16,21,22}

Variability during practice can range from performing the skill in various environments and in response to different stimuli, or even to partnering with additional tasks.^{3,21} For instance, a variable organization in law enforcement training would be to have officers practicing the decision to enact a correct response based on a changing scenario. An example of this might be to have officers choose the correct skill program based on the environmental stimuli, while giving verbal commands, or using persuasive communication, as would be more applicable in real-world scenarios.

Research explains why this type of practice is most beneficial.^{16,17,23} One of the primary theories outlining the benefits is the Contextual-Interference Effect, which explains how skills are learned significantly better when practice involves numerous variations of a skill.^{3,17,21} Two possible explanations for this exist:

1. As students practice some variations of a skill, they begin to identify the specific aspects of the skill that can be modified for various situations.^{3,17} This helps to make the skill more distinct in its characteristics and create a more elaborate memory of the skill.²²
2. As students practice numerous variations of a skill, they must reconstruct the memorized program, formulating a newer, stronger memory representation of that skill.^{3,23} Thus, it takes longer for these individuals to improve in their performance of the skill, but their memory and ability to perform the skill in diverse situations becomes dramatically better.²²

What is the difference between learning and performance?

All instructors should understand the distinction between learning and performance.^{2,3,12} Learning is considered a relatively permanent change in which the learner has lasting capabilities to flexibly perform and integrate a specific skill¹² with other skills when appropriate. Performance is the ability at any point in time to perform that skill¹² isolated from other skills and in a closed or unchanging environment. Although performance is often used in training to estimate whether learning has occurred, it is considered temporary and extremely variable based on a number of factors including the individual's type of learning experience and the environmental and performance challenges present at the time of application. A learner can experience significant increases in skill "performance" over a short period yet not permanently retain the skill.

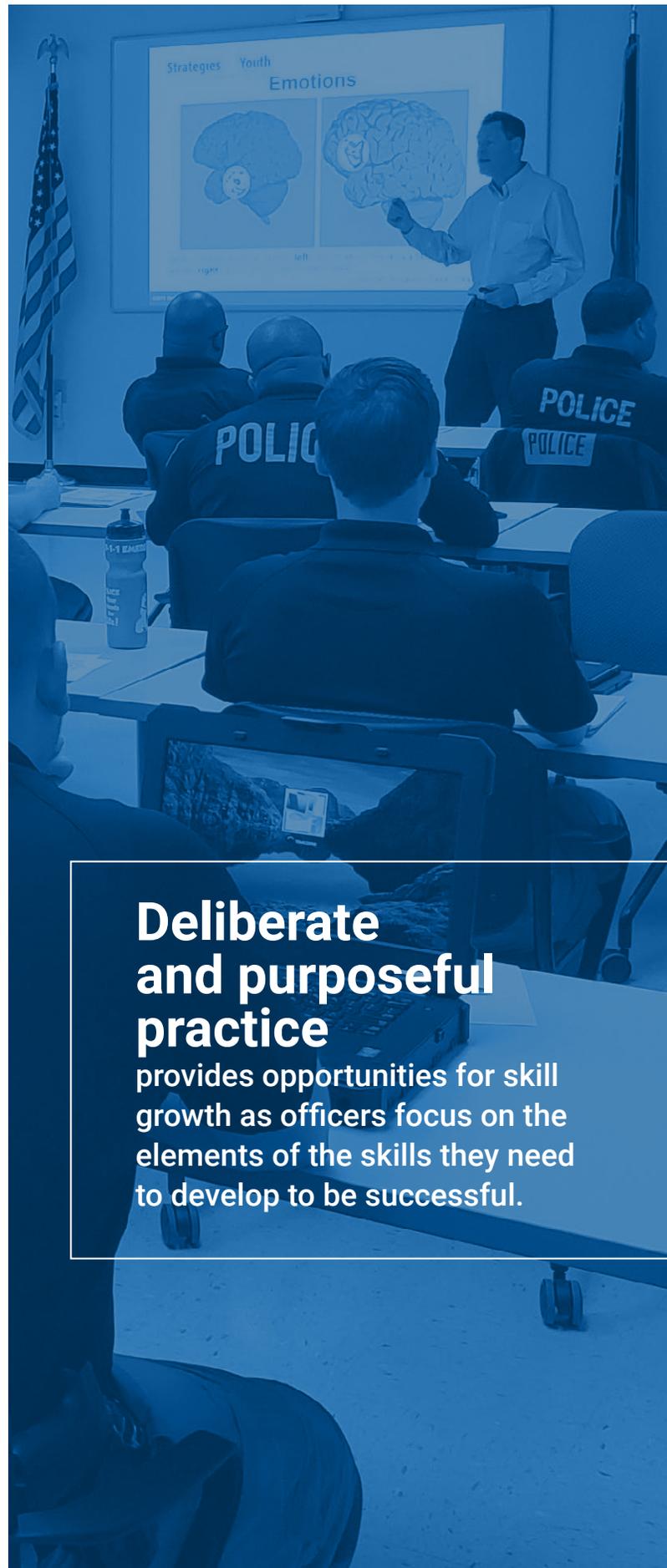
An important consideration in this type of training is how instructors cue learners' foci of attention. This is important in both the initial instruction and in corrective guidance of the student. Deliberate and purposeful practice provides opportunities for skill growth as officers focus on the elements of the skills they need to develop to be successful.

There are two areas on which to focus when performing any skill:

1. **Internal focus** where attention is directed inward such as a proprioceptive and kinesthetic focus during a motor skill performance such as a trigger press.¹² This internal feedback from our muscles, joints and other senses is crucial for not only knowing whether we performed a movement correctly but also for developing correct automaticity.
2. **External focus** where attention is directed at the environment, objects being manipulated, or the end goal of the performance.¹² Examples of this are when officers have a successful take-down, or when they have effectively noted communication from a person in distress and persuaded cooperation. This is the common "keep your eye on the ball" adage.

Many researchers are beginning to suggest that both internal and external foci of attention may be beneficial, depending on the stage of learning and skill level of the individual.²⁴⁻²⁷ The thought is that it would be difficult to be successful if one kept their eye on the ball but didn't know what a correct swing felt like.

Researchers theorize that new learners benefit by focusing on internal information first then attending to the step-by-step process of how to complete the skill successfully.²⁸ This internal information, for example, includes how a movement feels, what position the body is in and what the learner did to perform the movement that will then correctly guide future performances. The same is true for even a very different skill such as paraphrasing. This feedback is crucial for the students to detect and correct errors, as well as to train performance without conscious effort or control. Once students can perform a skill with less cognitive focus, they can start to perform the skill or movement with



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higher levels of external focus and direct more attention toward multi-tasking and their goals.²⁹

Finally, for continuous skill development and to ultimately reach the ideal automaticity, complex skills should be overlearned.^{6,12} This is the process of continuing to regularly train and practice a motor skill, even after an individual reaches a specific level of proficiency.^{10-12,30} Research on athletic training suggests that given the fast pace and high cognitive demands of competition, overlearning can be beneficial for not only retention but also dual-task performance.¹¹ Dual-task performances challenge an individual's working memory, or his/her ability to allocate attentional resources to a specific task. The less attention an individual needs to give to a skill, the more attention can be paid to other tasks such as, if that skill is being applied appropriately and according to law, policy and tactics and the demand or challenges of the encounter.^{6,10}

Recommendations for improving police training

To improve the training and preparedness of officers it is recommended agencies consider the following:

1. Scheduling of training

The scheduling in which training takes place, including how often training occurs, the break periods between training, and how often skills are practiced are crucial to officer retention and performance when high-stress moments arise.

2. Variability and incorporation of skills

The variability and incorporation of additional skills during training should play a critical role for officers at all levels. Incorporating additional skills, such as de-escalation techniques, communication skills and situational awareness, as well as variability in the stress, environment, stimuli and scenarios practiced, will significantly improve an officer's ability to perform and adapt skills to a variety of situations.

3. Types of testing

Retention and transfer tests should be used to best evaluate whether learning has occurred.

Retention tests, in which a skill is performed numerous times and at random intervals following the learning of the skill, best show whether an individual has permanently learned that skill.¹² Regular testing for general retention should be conducted to ensure critical skills are retained. Transfer tests, such as the use of the skills in simulations, whether video or live, are also effective in building skills and measuring learning. Scenarios facilitate the building of the skill and can be also used to examine whether an individual can make the adaptation necessary to perform that skill or a realistic variation of the skill whether in a new environment or under stress.

Transfer tests may be more important than retention tests alone as they require officers to adapt learned skills successfully in a variety of situations.

4. Workgroups

Work as a peace officer is a social activity, requiring diverse social and emotional skills. Having recruits work in small groups from the beginning of the training has tremendous potential to build both emotional and social skills. But having students work with, critique and facilitate the learning of skills in a group process creates a tremendous learning opportunity for all students, over all skills at all levels, and can build in them a high level of professional proficiency.

Conclusion

Today's officers and the communities they serve deserve the best-trained officers possible. To accomplish this the profession must shift from teaching to learning objectives. This necessary training must be based on the best scientific evidence possible and taught in a method that ensures the skills are retained, functional and combined with effective decision training.

Stages of Information Processing and Decisions

To fully understand the complexity of learning and performing skills, it is important to understand how decision-making occurs

Numerous theories exist about information processing, the decision process and the decision/action coupling that identify a sequence of stages or tasks that must be completed before appropriately initiating a skill.

Stage 1: Identify relevant cues in which sensory information is taken in and identify information or patterns of information within the individual's environment. This identification of a pattern or a schema is quickly and often unconsciously matched with an experience that leads to a decision process. For officers, this may include specific details at the scene of a domestic disturbance or the pattern of movements a suspect makes.

Stage 2: After processing the stimuli in the environment and making sense of the incident, the officer must select the appropriate professional response.

As previously stated, the selection of the response is based on many factors, including training, previous experience, current relevant information, and the speed and seriousness of the incident. However, for a skill or a solution to even be available for selection, it must be learned, trained and practiced in a relatively permanent, yet flexible, program, otherwise, the officer might resort to startle responses and automatic movement reflexes.^{3,31,32}

This was observed in a study where officers responded when a gun was pointed and fired at them. Some officers reacted by putting their hands up to block the bullet and stepped backward despite receiving training in close-proximity, weapon take-away

techniques.³³ Weapon take-away techniques, as traditionally taught in an academy, were not functional within weeks of instruction.³¹ Numerous factors influence an individual's ability to assess and then react quickly and correctly to a stimulus. The greater the complexity of the patterns or stimuli requiring recognition, and the more complex the responses, the more time and difficulty the officer will have in choosing a correct response.^{12,34,35} Officers do not have the privilege of making simple reaction-time decisions, as

often tested in a low-stress, laboratory setting.^{6,36} Often officers will be in complex, dynamic environments that make information processing and decision-making more challenging. As observed in law enforcement officer specific studies, officers reacting to more complex stimuli were significantly slower and made more shooting or movement errors.^{36,37}



The limited amount of clinical decision-making in law enforcement preparation creates a chasm between classroom instruction in the academy and the reality of the officer's professional practice. It is clear from a robust body of research that decision-making is a skill and can be taught. Reading and then understanding an incident and its evolution is a foundational step for all decision-making. Understanding common types of critical encounters can be accomplished by literally teaching the student what to read in the environment and, when perceived, primes the understanding of the situation that then drives the decision process. This needs to be taught throughout the curriculum and not just on a few shoot/don't shoot scenarios.

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Additional Resources

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Sustaining a science-based approach to law enforcement training and education

Easy and effective ways police trainers can use the science of learning to develop and deliver police training

By Anthony H. Normore, Ph.D., and Mitch Javidi, Ph.D.

Sustainability is critical when new training initiatives are developed, especially when an agency's culture plays a pivotal role in the effectiveness of the new approaches. Within this context, sustainability is defined as "the degree to which an innovation continues to be used after initial efforts to secure adoption are completed"¹ or "when new ways of working become the norm."² To prevent the fading or decay of short-term improvements, it is vital to continue to maintain or adapt an EBP and to evaluate its integrity and sustainability. There are no quick fixes for dealing with sustainability.

How then does a law enforcement agency make science-based training and education part of its department's training culture while simultaneously transforming the culture?

Aligning training with evidence-based policing

Today, we're seeing researchers advocate to push evidence-based policing further upstream, to include – and analyze – data produced by officers from the day they enter the academy.

According to Skogan, Van Craen and Hennessy, we know little about the short- or long-term effects of police training.³ These authors assert that people usually develop one or two mindsets about themselves: either fixed or growth. An individual operating with a fixed mindset believes that who they are in terms of potential – intellectually, physically and emotionally – is a known quantity, set from birth, unchanging over time. Every failure or setback represents an innate boundary. Whereas an individual with a growth mindset sees every failure or setback as an opportunity to learn. Feedback data isn't a wall, it's a staircase.

Evidence-based policing emerged from researchers who embraced a growth mindset about law enforcement. Police executives can use evidence-based policing to uncover and shape best practices in policing. And there's no better place to start than with your training. What do you need to align your training with evidence-based policing?

1. Invest in analytics to capture and manage data

We train to avoid making mistakes when it counts. However, there's a broader analysis to be done on training, specifically as it relates to performance in the field. If we track an officer's training, but not their performance throughout their career, then what do we learn about the training they received? Very little, if anything at all. This is why investing in analytics and data capture is essential to deriving the benefits of evidence-based policing in your training.

Crime reduction was realized by longitudinally capturing and comparing the use and efficacy of common police interventions. It became possible to draw conclusions about which interventions had the greatest impact on crime given a certain set of variables. The same method can be applied to police training if the data exists to support it.

2. Partner with researchers to develop an evaluation framework

Data is great on its own, but simply having it won't yield the insights we've seen applied so effectively in other areas of policing. Researchers enjoy working with police departments because they represent a wealth of data. As you invest in new training or revise existing programs, reach out to research-oriented academic institutions, companies, or general organizations to help you set the framework to evaluate your training holistically.

The first step to evidence-based policing is implementing a system that can intelligently collect and analyze all the data your agency produces. Culturally, the more reliable and valid information you have, the better your decisions will be, which creates a ripple effect of optimization that increases the likelihood your officers will have a long and safe career.

What is knowledge?

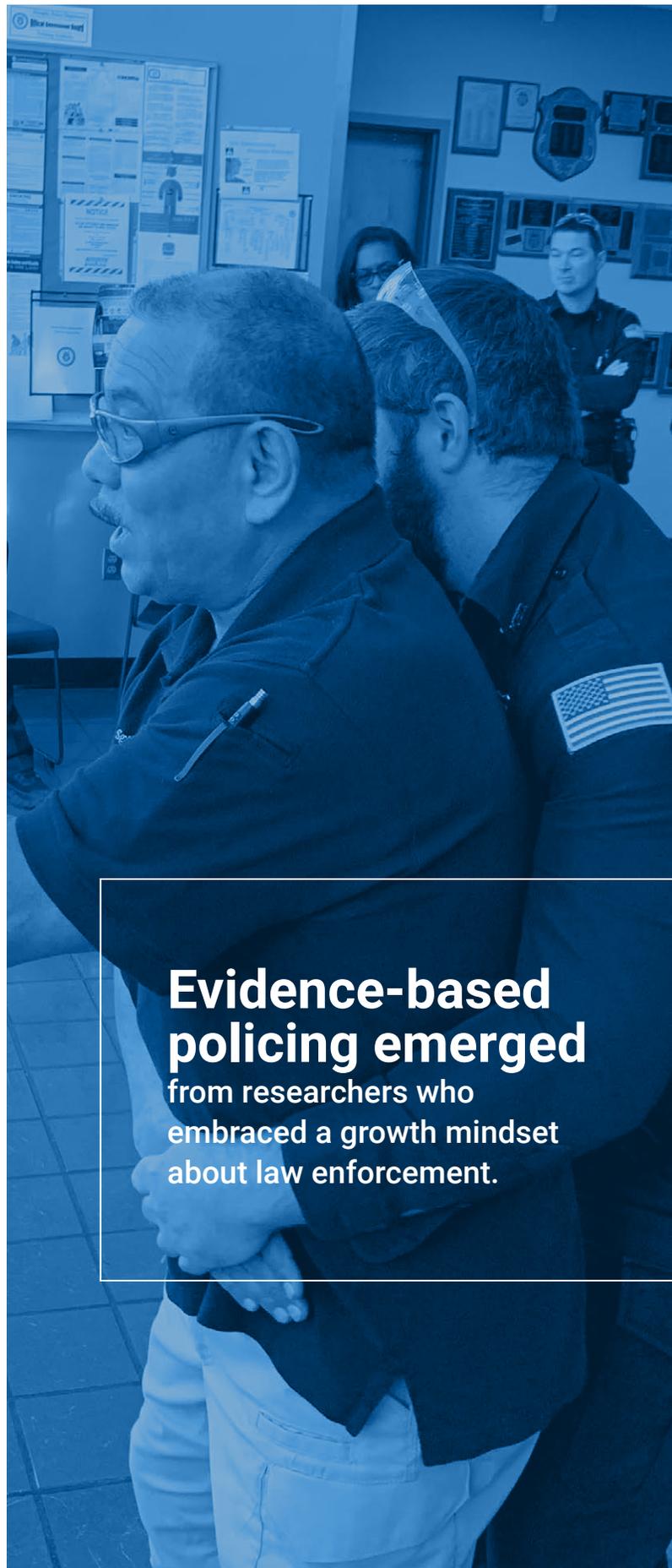
Culture exists as a deeply rooted set of values, norms and practices intertwined in every aspect of police training. Its familiarity and seemingly commonsense foundations create an innate resistance to change. As such, it takes more than logic to get everyone to agree to lasting change. Thus, long-lasting change is most likely when it is self-motivated and rooted in positive thinking instead of arousing fear or regret in the person attempting to make a change. It is important to distinguish the difference between learning knowledge and the learning and development of skills.

Learning is the process of studying, teaching and education. It's centered on the delivery of information. In most disciplines, this means how to get information to an employee, which often translates to classroom-based instruction, a learning management system, or blended approaches. The process of learning, however, is irrelevant if no real knowledge is acquired. Learning is simply the means of acquiring knowledge, and that distinction is key.

Too many times, police officers get pulled into training sessions where, over a week, they're taught a million things. But, during this information overload, how much learning happens? The answer is very little, if any. Most learning decays over time because it's not designed to effectively create long-term knowledge.

What is knowledge, then, really? Knowledge involves understanding, comprehension and mastery. It's about acquiring, sustaining, growing, sharing and applying information to achieve an organizational impact. If learning is a recipe, then knowledge is the cake. You need to have knowledge to perform at your best; knowledge is what truly drives the right job actions and, in a setting such as policing, it ultimately helps the agency achieve its objectives.

When police officers don't have the right knowledge, they can't make the right decisions. A few wrong



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decisions might not seem like a big deal. After all, everyone makes mistakes. But wrong decisions can cost an agency millions of dollars each year.

If you can't get the right knowledge to your team, an endless stream of negative consequences can occur. For example, officers may have more accidents, injuries and worker's compensation claims. The agency won't be able to improve customer service for protecting and serving communities and you won't be able to do anything else to propel the agency forward. That's because what your officers know, or don't know, has a huge impact on the agency's ability to achieve success. If officers don't have the knowledge they need, they simply won't be able to help the agency achieve its potential.

Assumptions that learning equals knowledge are incorrect most times. Many agencies today just dump all this learning on officers, hope they'll remember everything and rarely follow up to see if knowledge was gained. All this learning doesn't help to create knowledge, and it doesn't help the agency outcomes, either. Instead, learning needs to become a catalyst for knowledge – the way to build expertise in officers to ensure they can get to a place where they understand, retain and apply information on the job that will impact agency results.

This isn't an overnight fix. Knowledge creation needs to be a continual process that happens by weaving learning into each workday and is adapted according to individual strengths and weaknesses.

Sustainability of evidence-based practice

Davies, Tremblay and Edwards assert that the sustainability of evidence-based practice is a vital consideration to maintain or increase improvements in the provision of quality services and to avoid erosion or decay of a practice by both new and seasoned officers including command staff. Evidence-based practices require ongoing attention to changes in an organization or practice setting, as well as watchful monitoring for new evidence and priority outcomes. These authors assert that emerging promising practices for sustainability include the following:⁴

- **A “yes we can attitude”:** Improving sustainability requires building positive thinking and celebrating small wins through a stepwise evolution. It requires

a change philosophy that shifts the discourse from a focus on deficits to an emphasis on the potential of individuals and organizations.

- **Inter-professional reflective practice:** Interprofessional reflective practice is the act of interrogating the efficacy of daily practice to learn from professional experience. As professionals are more receptive to innovation emerging from their internal dynamics rather than those imposed by an external imperative reflective practice creates the synergy for sustainable change “integrating science push and demand pull” occurring within the process of social interaction
- **Individual, multilevel and collective leadership:** Three broad leadership strategies are central to successfully implementing and sustaining evidence-based practices: (1) facilitating individual staff to use the guidelines, (2) creating a positive milieu of best practices, and (3) influencing organizational structures and processes
- **Evidence generation and sustainability:** We suggest that evidence application that spans traditional boundaries for police services may not only support sustained use of evidence, but also generate new evidence gaps that will need to be addressed by teams of researchers who are also willing to cross their network boundaries.
- **Performance evaluation:** Performance evaluation has a role to support change and ensure sustainability. Sustainability indicators are essential building blocks in evidence-based planning, management, and monitoring processes.

The literature on innovation demonstrates the importance of individual leadership for evidence-based policing implementation.⁴ Even with the scarcity of research about the determinants of sustainability, we can anticipate that leadership is a cornerstone of sustained evidence-based policing. Specific leadership activities included providing support, being accessible and visible, communicating well, reinforcing goals and philosophy, influencing change, role modeling, ensuring education and policy, monitoring outcomes, and supporting the development of champions.

Good sustainability indicators must be easy to understand, as well as clinically and economically feasible to measure. Based on our experience and the literature, some of the benefits from developing and using good indicators include more timely decision-making, which may help reduce risks and/or costs, identification of emerging risks and or conflicting issues that may compromise sustainability, setting clear benchmarks for ongoing performance measurement, and greater public accountability, that is, providing credible information for the public and other stakeholders.

In conclusion, evidence-based policing is a scientific method for finding the best tool in your toolbox and recognizing when that tool no longer meets the needs of the job. While people tend to behaviorally remain the same, the environment we inhabit, and how we inhabit it, seems to be changing with more speed and variability than previous generations. Evidence-based policing is a means to work with that change instead of against it. By adopting the mindset of evidence-based policing, you're preparing your officers to succeed today while sharing an evaluation model that ensures they succeed in the future.

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Enhancing hands-on training with online learning

Online learning can meet many of the demands of the human brain to engage with the material, retain information and ultimately perform better in the real world

By Chief Joel Shults, Ed.D., Jonathan Wender, Ph.D., and Nassar S. Nassar, Ph.D.

The [Challenge of Crime in a Free Society](#) was released in 1967 as fear of crime grew in the mix of civil unrest played out on America's nightly network news in the long shadow cast from the assassination of President Kennedy. The report's timeliness was remarkable given the ensuing upheaval in crime and justice issues for the next decade and beyond, and it is still relevant today given the latest calls for police reform.

In that seminal report, the word "college" appears 94 times in the 342-page document with a final recommendation that college education is increased for police officers and college-educated officers granted better hiring opportunities. The reason this is significant is that policing had previously been seen as a relatively low-skilled occupation, the requisite skills for which could not be learned in a classroom.

Today's discussions on the value of education are still couched in a dichotomy of classroom versus vocational teaching and learning, degrees versus certificates, brain work versus muscle work, and "sage on the stage" delivery versus "hands-on" training. Interestingly, and most relevant to this discussion, is that these lines of demarcation are not so clear in the center of the learning process – the brain.

Mental and physical processes

The learning process moves from what researcher [Paul Smolensky](#) calls the conscious processor to the intuitive processor. We understand this when we try to teach a novice to drive a car. The things experienced drivers do are intuitive and hard to articulate to any person who has never driven an automobile. What the new driver might know is from inactive observation from a passenger seat. In considering that learning process from watcher to driver, we understand that there are mental processes that must connect to what

the hands, feet and eyes do for successful driving to take place. How much of that mental process must be immediately attached to the physical sensations of touching the steering wheel, reaching the pedals, and finding the windshield wiper switch?

Research on decision-making [in medical training for nurses](#) shows that developing skills of perception and cognition are key to expert performance and can be learned in a low-fidelity, online environment with reflection and follow up simulation. So, while online learning can never replace the "hands-on" process of acquiring physical skills such as driving, shooting, and defensive tactics, online training can play a critical role in developing the decision-making skills required to effectively perform these skills.

Furthermore, digital learning can accelerate the development of expertise in a way that hands-on training by itself cannot. We can all think of officers who are high-performance drivers or shooters, but who nonetheless make poor decisions in the real world about how, when, and where to use these skills. This is why psychomotor skills and decision-making must be learned and practiced in an integrated manner, rather than following a siloed model as is too often the case.

We understand that there is valuable and foundational learning that can occur before going "hands-on." Every driver's education, firearms and arrest control course is preceded by a classroom orientation session. The practice of trainers and teachers is to use classroom engagement in skills development. If our experience validates this connection, the question is whether that classroom engagement can be delivered remotely via online platforms, and the extent to which it can be integrated with live skills training.

A tipping point in virtual education

With a fixed paradigm in traditional brick and mortar classrooms, it took well over a decade for the education community to accept virtual learning as a legitimate and credible delivery mechanism within the knowledge dissemination process. The shift in public safety training will be much shorter for two main reasons:

1. Public safety trainers are generally grounded in educational institutions and can effectively transfer lessons learned in the education sector into practical applications and training solutions at a faster pace.
2. The gap between higher expectations and limited resources is more extreme in public safety training. In other words, public safety professionals do not, typically, enjoy the same level of robust resources afforded to higher education; hence more emphasis on efficiency.

As in virtual education, virtual training is more efficient as it negates the limitations of time and space. As in education, the acceptance of virtual distribution of knowledge will largely be driven by technological advances, as well as the continuous bandwidth expansion on a large scale and in more locations. We should expect a similar wide adoption by various segments within the public safety sector at a faster rate now that the tipping point has occurred.

Finally, the COVID-19 pandemic and new demands for major police reform can only speed up the adoption pace as the need for “virtual” training will be exponential.

– Nassar S. Nassar, Ph.D.

Basic principles of learning and retention

A [paper](#) from the Distance Education and Training Council cites four principles of learning:

1. Contiguity
2. Repetition
3. Reinforcement
4. Social-cultural

Contiguity is enhanced when the learner identifies new material with the knowledge they already possess. This can be accomplished by immediate feedback, and by comparisons, metaphor and simile, relating to some life experience or adding to a foundational body of knowledge. All of these are transmissible with online learning methods.

Repetition can be easily accomplished in online presentations. Especially in strengthening memory and retention, the presentation of concepts using repeated words and practicing, identifying, or rephrasing those concepts throughout the instruction helps move knowledge from short term memory to long term memory.

Reinforcement can be programmed into online learning platforms with frequent opportunities to complete assessments. Learning programs with immediate quizzes or engagement with the material allows for positive feedback.

Social-cultural engagement with the training materials can be a challenge in online platforms. When learners engage with others to discuss the material and find context for the information, the material develops personal and emotional relevance and connections that attach powerful feelings to the knowledge, embedding it further in the mind. The current generation of gamers is often very social online, and those attachments can translate to learning platforms as well.

In examining each of these essential learning principles, the use of online learning platforms can meet the need. Practice and rehearsal of skills can occur online as well.

In [Motor Control and Learning: a Behavioral Emphasis](#), Schmidt and Lee assert that mental rehearsal has a measurable outcome on skill development. Extensive

research on deliberate practice and decision-making show across many fields ranging from sports and medicine to policing that practicing key cognitive and perceptual skills accelerates the development of expertise. Schmidt and Lee cite multiple studies in their section on mental practice that give evidence of significant improvement in physical skills with mental practice. Research comparing piano and basketball throwing skills of persons unskilled in either of those tasks shows a significant effect on the proficiency of the actual task from mental rehearsal. “Mental learning does transfer to physical performance” according to studies cited in neurosciencenews.com.

Conclusion

No one imagines that the firing range, driving track and boxing ring are going to be replaced by online learning. It is clear, however, that many of the goals of skills training can be met by remote learning.

The decision-making skills that enable the judgments within which technical skills are performed can be practiced and improved using low-cost, high-repetition digital tools. Moreover, the growing capacity of online learning platforms to provide detailed feedback to learners and their agencies offers the potential to move past “check the box” exercises that neither measure nor change performance in any meaningful way.

When it is well-designed and supported by effective trainers, online learning can meet many of the demands of the human brain to engage with the material, retain information, mentally rehearse, find social and cultural meaning, and ultimately perform better in the real world.



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Measuring what matters: The outcomes and impact of science-based training

Mapping performance goals to departmental and governmental needs may reveal areas where existing performance indicators could be more refined

By Joseph Trindal and Ari Vidali

In determining key performance indicators and measurable terms of an evidence-based training program's success, law enforcement stakeholders may find themselves facing a new set of challenges. These boil down to three pressing questions:

- Do the current metrics we use to gauge individual officer performance and departmental success, or failure still align with training following a shift to evidence-based learning methods?
- If new performance indicators are needed, how do we align them with current departmental goals, as well as the goals of larger governing agencies?
- Are these measures fair, transparent and truly reflective of the agency's role within the community?

The inherent nature of law enforcement work – and public response to the services officers provide – means answering these questions is not easy. While not directly related to evidence-based training, the idea of so-called “ticket quotas” is one example of how performance-monitoring programs are met with negative public perception and adverse judicial review in many jurisdictions.¹ If a performance metric suggests bias, bad-faith focus, or motives beyond the standard goals of stopping crime and upholding public safety, the eventual backlash can generate community distrust, diminish political support and devastate police morale.

That said, agencies and their stakeholders still have numerous reasons to measure the success of their evidence-based training policies in the field. Taxpayers and financial stewards both wish to know the time and

expense allotted to public safety yield measurable, sustainable results; and officers themselves will likewise wish to know how their training applies directly to on-the-job tasks and the true measures by which their performance is evaluated once they step out of the classroom.

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In describing these diverse motivations and challenges, a National Institute of Justice (NIJ) author argues the day-to-day management of a law enforcement agency is more complex than the hundreds of controls and gauges on a commercial airliner's cockpit, a comparison that almost certainly applies to the nuances of performance monitoring and management:

Unless something strange or unusual happens along the way, the airline pilot (and most likely an autopilot) follows the plan. For police agencies, “strange and unusual” is normal. Unexpected events happen all the time, often shifting a department's priorities and course. As a routine matter, different constituencies have different priorities, obliging police executives to juggle conflicting and sometimes irreconcilable demands.²



While arrests and closed cases will always be important, agencies must also consider the immense pressure for greater community outreach and human interaction.

Taking the “cockpit” idea a step further, law enforcement executives and others in a decision-making capacity, should take their knowledge of the department, its specific needs and outside pressures (specifically those from the community and larger governing bodies) and use them to choose the “instruments” that best reflect relevant measures of effectiveness.

This does not mean an agency must subscribe to far-flung statistical models to derive value from an evidence-based training regimen, let alone create new ones. Instead, mapping performance goals to departmental and governmental needs may reveal areas where existing performance indicators could be more refined.

Returning to one example shared in the NIJ piece, an agency formerly concerned with the number of serious crimes reported may turn its focus to the reduction of unreported crimes as a better-refined performance indicator; likewise, those formerly concerned with hardline use-of-force complaint numbers may find greater value in secondary data points, such as complaints against officers serving in a certain capacity.

On the individual level, performance indicators should follow a similar path, with “instruments” that measure an officer’s ability to measurably contribute to larger departmental and community-based goals. In many modern departments, the shift in outlook may naturally require a move from justice-focused performance indicators (arrest numbers and case closure rates being two common examples) to community- and service-based metrics.³

While arrests and closed cases will always be important, agencies must also consider the immense pressure for greater community outreach and human interaction. Improved community confidence in police yields a direct correlation to addressing neighborhood concerns and crime reduction.⁴ This pressure is the basis behind the ongoing “community policing” trend and numerous other groundswell changes within law enforcement. An officer who has undergone implicit bias and de-escalation training may not be best served by performance evaluation based on hard arrest numbers and little else; it is up to the individual agency to find a mix of factors that works well within their

unique context, with special focus on performance metrics-to-goals interdependencies, aligned in both on-the-job and evidence-based training evaluative criteria.

None of these suggestions are silver bullets. Even the narrowest best practice must ultimately be tailored to each department for best use. As one officer in a Deloitte research piece notes: “How do you reward an officer that has strong community ties and doesn’t make an arrest all year? Right now, those ties are not captured in metrics, but they can still be effective at preventing crime.”⁵

For the agency grappling with concerns like these, the issues may be less about what measures to monitor, and indeed more closely tied to precisely the kind of service the department wishes to put forth to the community – a matter closely tied to the question of departmental goals and community expectations. In reality, an agency concerned with implementing evidence-based training practices will likely have grappled with these very questions before implementation, which should at least lay a foundation for future change.

To the last point, a growing body of research seems to indicate that community-based measures focused on community trust and perception are “more informative” as performance indicators. According to BioMed Central, the softer performance indicators pose a paradox for agencies that wish to harness them: Because they tend to be more difficult to capture and quantify as compared to less useful “partial” performance indicators, department stakeholders may struggle to justify the return on

investment of capturing “better” statistics when less expensive, traditionally valued measures are cheaply and readily available.⁶

Still, no change comes without effort. Implementing evidence-based training requires a reassessment of on-the-job performance measures by which individual officers, supervisors and the department as a whole are evaluated. Decision-makers with knowledge of the communities they serve and a real appetite for change can embrace this challenge as a path toward measurably improved community relations, improved officer performance, and a reduction in the costly errors to which ill-trained officers might subject their department and the taxpayer – and a step towards the changing face of policing to reflect the priorities of the communities served.

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