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Developing Problem Solvers: New Perspectives on Pedagogical Practices in Police Use of Force Training

Mario S. Staller, PhD and Benjamin Zaiser, MA

Abstract

Police use of force training is a crucial guarantor of officer safety when preparing law enforcement professionals to prevent and deal with physical confrontations. Current research on the efficiency of use of force application in the line of duty revealed that acquired skills do not necessarily transfer to real world incidents (Jager, Klatt, & Bliesener, 2013; Renden, Nieuwenhuys, Savelsbergh, & Oudejans, 2015). Based on (a) a review of police use of force literature with a focus on the transferability of skills and (b) a consideration of modern approaches of skill development in the sports domain, we argue that designing learning environments based on sound pedagogical practices in the use of force domain improves the transferability of skills taught in training, without the expense of adding additional training time or employing expensive training strategies. It is also suggested that improving police use of force training with a more inclusive approach, emphasizing the acquisition and development of motor skills (i.e., handgun proficiency or self-defense techniques) in conjunction with the associated decision-making skills.

Keywords: police use of force training, reality-based training, police training, officer safety, skill transfer, representative learning design

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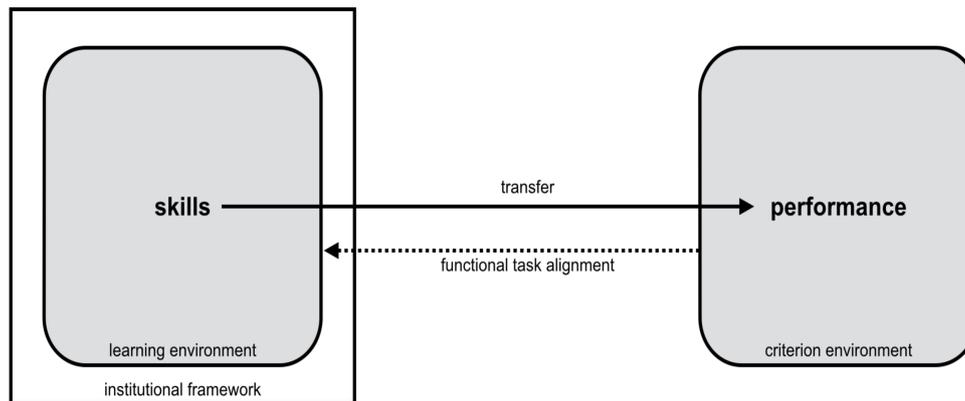
A defining aspect of the police role revolves around the capacity to use force (Terrill, 2003). Sound tactical decision-making is crucial in this context, since mistakes can have devastating consequences for incident resolution and impact on long-term public perceptions of policing (MacDonald, Manz, Alpert, & Dunham, 2003). Even though police officers never know when and where use of force will be required, performance of police officers must be efficient and accurate (Kavanagh, 2006). Furthermore, current research on the efficiency of use of force application revealed that acquired skills do not necessarily transfer to real world incidents (Jager, Klatt, & Bliesener, 2013; Renden, Nieuwenhuys, Savelsbergh, & Oudejans, 2015). Besides the ubiquitous recommendations (e.g., increasing the amount of training time and the amount of reality-based scenario training), we argue that focusing on pedagogical practices in the use of force domain may provide a valuable way for increasing skill transfer without the expense of adding additional training time or employing expensive training strategies. This can be done by: (a) reviewing the literature in the use of force domain with a focus on the transferability of skills, (b) outlining modern approaches of skill development in the sports domain, and (c) advocating for a more inclusive approach, emphasizing the acquisition and development of motor skills (i.e. handgun proficiency, control and restraint techniques, self-defense techniques, etc.) in conjunction with appropriate decision-making skills.

1 Skill Transfer in the Use of Force Domain: More Problems Than Solutions

1.1 The Scope of Use of Force Training: Skill Transfer is Essential

The purpose of police use of force training is to develop transferable skills that help officers prevent and deal with physical confrontations in the field (i.e., the criterion context). This training should ensure that the officer is competent to solve any upcoming conflict situation, even if such a situation was never practiced. The criterion context in which the officer has to perform involves physical (i.e., being exhausted, being hit, etc.), emotional (i.e., unfairness, fear of injury, or fear of death, etc.) and cognitive (i.e., processing available information rapidly, solving new situations, etc.) load (Angleman, Shinzato, Van Hasselt, & Russo, 2009; Renden et al., 2014). Therefore, performance in such situations requires: (a) a physical skill set, (b) decision-making and problem-solving skills, and (c) a mind-set involving aggressiveness, persistence, and determination (Staller, 2014b). The physical skill set consists of all use of force options, from physical presence over arrest and combat, to handgun skills. This skill set is often constrained by institutional policies (Staller, 2014a). Furthermore, the learning environment itself is embedded in an institutional context (see Figure 1), which varies in different nations, states, or even between different law enforcement agencies. Constraints on the learning environment are present, due mainly to agency policy and financial factors.

Figure 1. Influential factors of skill transferability to the criterion environment



The financial factors include: training facilities and equipment, amount of ammunition, the amount of training per officer, and the embedment of training in the professional development of the officers. For example, training environments or settings vary depending on whether there are several consecutive training sessions (i.e. basic training) or just single training sessions or training days (i.e. in-service training). Furthermore, practice varies depending on available resources (i.e., time, equipment, locations, instructors, etc.). Even though scenario-based exercises are regularly incorporated into training (Oudejans, 2008; Taverniers, Smeets, Van Ruysseveldt, Syroit, & Grumbkow, 2011), some training session may be conducted in group-sessions with a low instructor-student ratio. In this context, Morrison and Garner (2011) concluded that American law enforcement agencies and academies differ in their approaches regarding frequency, durations, activities, emphases, formats, and specific contents of use of force training. This approach coincides with German Police Forces use of force training (Bochenek & Staller, 2014; Staller, 2014a).

There is consensus in the law enforcement and military literature that repeated experiential practice is key to performing more effectively in situations that require use of force (Artwohl & Christensen, 1997; Asken & Grossman, 2010; Broomé, 2011; Darsa & Sasson, 2014; Dror, 2007; Grossman, 1996; Miller, 2007; Murray, 2004). However, there is no empirical evidence about the efficiency of use of force training programs (Morrison, 2006; Morrison & Garner, 2011). Therefore, Morrison and Garner (2011) put forward the argument of implementing training-oriented feedback loops, which take information about the performance in real world encounters and feed them back to training, in order to assess the quality of the learned skills and how well such skills transferred into the criterion context. This would be the basis for eventually modifying the use of force training program with its learning environments. Due to the lack of feedback loops, Morrison and Garner (2011) concluded that at present time they “do not have compelling evidence to inform decision-makers about the best approaches” (p. 343). Furthermore, they warned about assuming that there has recently been an exponentially pragmatic leap regarding these approaches.

1.2 Recent Approaches in Optimizing Transferability of Skills: Problems and Misconceptions

Recently, several studies have been conducted focusing on the subjective experience of officers in conflict situations and how training transferred into performance in real world conflict situations (Jager et al., 2013; Renden et al., 2015). Results for arrest and self-defense techniques revealed that officers struggled to apply the exact techniques taught in training. One study participant of Jager et al. (2013) described the difference between being attacked

in training and in reality like this: “The attackers don’t stand around and attack you stupidly; they charge at you, it’s chaos, it looks differently” (p. 346, translated from German). In order to bridge the gap between training settings and a performance context, Jager et al. (2013) recommend (a) providing more training and (b) focusing on reality-based training. Likewise, Renden et al. (2015) recommended in this context (a) providing more training, (b) applying more reality-based practice, and (c) revising the skills taught and choosing reflex-like self-defense moves in order to be applied under pressure (p. 16).

The given rationale for the first strategy of increasing the amount of training provided by Jager et al., (2013) and Renden et al. (2015), is that more hours of training enable the officer to learn to execute the skill automatically. This goal of automaticity of skill execution in the context of police use of force is found throughout literature (e.g. Artwohl & Christensen, 1997; Kavanagh, 2006; Murray, 2004; Norris & Wollert, 2011; Siddle, 1995). According to Kavanagh (2006) skill execution is the conditioned response to a certain stimulus leading to “the use of stimulus-response conditioning” (p. 27). Stimulus-response conditioning can be fostered by high amounts of repetitive practice, which Kavanagh referred to as “muscle memory” (p. 27). Likewise, Murray (2004) stated in this context “many repetitions of the desired action are necessary to *condition* that action to the level of Unconscious Competence in order to improve the likelihood of adequate performance under stress” (p. 218, emphasis in original). These recommendations for pedagogical practices seem to stem from outdated motor skill learning theories, where skill acquisition was thought to derive from many repetitions of the same movement without mistakes (closed-loop theory; Adams, 1971). Motor learning theories evolved fundamentally since then, seeing mistakes as equally beneficial for learning (schema theory; Schmidt, 1975) or focusing on implicit learning processes without explicit attention to the performed motor skills (reinvestment theory; Masters & Maxwell, 2008). Learning theories for general skill development have equally evolved, focusing on the development of decision-making skills in conjunction with motor skills. Currently, skill development is not considered as linear, leading to approaches, which focus on non-linearity, ecological dynamics and tactical skill development in conjunction with implicit motor skill development. The integration for motor skill development in conjunction with decision-making skill development is supported by the statement of Vickers (2011), who explicitly argued that, contrary to common belief, “there is no such thing than muscle memory” (p. 197). All memories about movements are stored in the brain, resulting in the need for creating neural networks, which underlie gains in motor performance, in order to retain and transfer skills to the problem at hand. Following these arguments, we suggest that skill execution in the use of force domain should not be automatic, in the sense of conditioned responses.

The second strategy focused on increasing the quality of practice by employing reality-based training sessions. The application of reality-based training scenarios in order to foster optimal skill transfer is accepted in the law enforcement community (Armstrong, Clare, & Plecas, 2014; Murray, 2004; Norris & Wollert, 2011; Wollert, Driskell, & Quali, 2011). Yet, a consensus is lacking about what the basic characteristics of reality-based training are. For example, Oudejans (2008) referred to the perceived pressure of experiencing a threat that returns fire, whereas Hoff (2012) simply referred to realistic environments. Wollert and colleagues (2011) used the term “scenario fidelity” (p. 47) to describe the extent scenario-based training reflects realistic conditions in the dimensions of equipment, sensory, and psychological fidelity. Furthermore, they argued that absolute fidelity in training is not necessary. It is more important to design scenarios that “incorporate realistic contextual elements [that] enable students to attend to critical cues, improve decision skills, and ability to respond with the correct motor program” (Wollert et al., 2011, p. 44). The neglect of physical resemblance has recently been shown in the medical domain, where

there is a lack of evidence that simulations that look like the criterion context lead to better learning (Norman, Dore, & Grierson, 2012; Scerbo & Dawson, 2007). Therefore, recommendations in the medical domain include shifting the emphasis in simulations from physical resemblance to functional task alignment, while focusing on methods, which enhance the transfer of learning (Hamstra, Brydges, Hatala, Zendejas, & Cook, 2014). Grierson (2014) argued that simulations have to take account of the fundamental information processing events that underpin human performance. From a training pedagogical perspective, reality-based scenarios provide a pathway of practicing technical and tactical skills, so they transfer to the criterion environment. Nevertheless, it should be noted that reality-based training scenarios are one method of training specific skills, leaving the door open for further approaches of optimal learning environments for skill transfer. In line with this, Renden et al. (2015) stated, “how individuals train is crucial in skill acquisition” (p. 16). Likewise, Norris and Wollert (2011) proposed that training strategies should be reviewed in order to focus on methods that ensure the transfer of skills to the criterion context. Therefore, we suggest abandoning the term “reality-based” because of its multidimensional and imprecise nature. Instead, more useful terms (that reflect the principles of effective learning and transfer) should be applied. Recently, Pinder, Davids, Renshaw and Araújo (2011) proposed the term “representative learning design” as a framework for interpreting functionality of practice tasks and learning environments.

The third strategy focuses on optimizing the employed techniques or tactics per se by applying skills, which are more reflex-based. Successful skill transfer depends on institutional factors (e.g., training time) and on the robustness of the taught skills in the real conflict situation (Renden et al., 2015). Generally, considerations about “what to teach” are prevalent in the law enforcement community. In line with this, Morrison and Garner (2011) stated that law enforcement academies have to decide which weaponry and physical techniques should be taught and to what extent. Yet, regarding the effectiveness of training approaches, Morrison and Garner (2011) concluded, “we do not have compelling evidence to inform decision-makers about the best approaches” (p. 343).

To sum up on a more abstract level, the current literature in the police use of force domain proposes three different strategies to optimize skill transfer to the performance context: (a) optimizing the institutional framework, (b) optimizing training methods, and (c) optimizing the chosen motor skills to be taught. From a skill acquisition perspective, we suggest focusing mainly on optimizing how skills are taught (i.e., methodology) in order to ensure skill transfer to the criterion environment. This poses more responsibility on the use of force trainer, since this aspect is less influenced by external constraints, and which has to be considered and decided about in every training session (Staller, 2014a).

1.3 Advances in Understanding the Performance Context: Decision-Making as a Key component

Understanding the performance context is critical for developing and designing optimal learning environments that enable the transfer of skills from the training environment to the real world. Current research in the police use of force domain allows for a better understanding of the environment and mechanism present when officers deal with armed or unarmed conflict situations and that are to some extent associated with decision-making processes. Newer perspectives in police use force research focus on understanding and reducing unnecessary and excessive use of force (Atherley & Hickman, 2014; Gül, Hekim, & Terkeşli, 2013; Prenzler, Porter, & Alpert, 2013; Smith & Holmes, 2014), performance and training under pressure, threat, anxiety (Colin, Nieuwenhuys, Visser, & Oudejans, 2013; Nieuwenhuys & Oudejans, 2010; 2011; Nieuwenhuys, Caljouw, Leijssen, Schmeits, & Oudejans, 2009; Nieuwenhuys, Cañal-Bruland, & Oudejans, 2012; Nieuwenhuys,

Savelsbergh, & Oudejans, 2011; 2015; Oudejans, 2008; Renden et al., 2014), and psychobiological responses as well as cognitive functioning under simulated armed confrontations (Boulton, 2014; Roberts, 2012; Roberts & Cole, 2013; Strahler & Ziegert, 2015; Taverniers et al., 2011). Advances in the understanding of tactical decision-making of applying use of force have led to a shift from linear to non-linear use of force models, where the police officer is located in the center choosing use of force options depending on the unfolding situation (Roberts 2012). Furthermore, recent results (Boulton, 2014; Roberts, 2012) suggest that naturalistic decision-making (NDM) models may be most applicable to tactical decision-making of police officers. Such models account for real world situations defined by ill structured problems in uncertain, time pressured, and dynamic environments with shifting or competing goals and high stakes (Endsley, Hoffman, Kaber, & Roth, 2007; Lipshitz, Klein, Orasanu, & Salas, 2001; Parent & Jones, 1998). Experienced decision-makers are thought to rely on intuitive decision-making based on recognition of situational cues (Ross, Klein, Thunholm, Schmitt, & Baxter, 2004), which flexibly shifts from one process to the next, depending on the situational assessment (Rasmussen, 1976). In contrast, inexperienced decision-makers have been found to use slower analytical methods (Klein, 2008; Lipshitz et al., 2001). Consequently, decision-making models for police use of force, which are based on traditional decision-making, are too complex to use proficiently once an immediate threat is posed (Boulton, 2014; Roberts, 2012).

Likewise, the military has a number of important initiatives trying to move intuitive, naturalistic decision-making into the mainstream (Fautua & Schatz, 2012). In this context, researchers put forward the concept of “cognitive readiness,” which describes the mental preparation an individual must establish and sustain to perform effectively in the complex and unpredictable environment of modern military operations (Fletcher, 2004). According to Fautua and Schatz (2012), “effective cognitive readiness ultimately manifests as successful pattern recognition, creative adaptability, and intuitive decision-making in the field” (p. 277), directly affecting performance during combat operations. Therefore, Fautua and Schatz (2012) advocated that the “comprehensive development of sophisticated cognitive readiness capacities requires a more fundamental shift in the military training and education culture” (p. 280). In order to manifest such a shift in training paradigms, the training and education community must recognize that higher-order cognitive skills for personal in the field are fundamentally “new” – not merely a slight deviation from the status quo (Fautua & Schatz, 2012). Furthermore, Fautua and Schatz (2012) argued that the challenge lies in convincing leaders, instructors, and curriculum developers of the value and trainability of the more ambiguous, intuitive capacities involved in cognitive readiness. To our understanding, this reflects the uncertainty regarding the pedagogical question of how to train such skills.

Without argument, training plays a crucial role in the development of police officers’ skills in conflict situations. Despite the growing insight in the conditions under which police use of force takes place, recommendations regarding “how to teach” are rare, except for scenario-based training programs (Driskell, Salas, Johnston, & Wollert, 2008; Murray, 2004; Norris & Wollert, 2011; Wollert et al., 2011), and usually follow traditional approaches of skill acquisition and development.

2 Modern Approaches to Skill Development: Incorporating Decision Training

Extensive research in the domain of motor learning as it refers to practice design, feedback, and instruction has shown that there are two strands of pedagogical approaches to the design of learning environments (Vickers, 2007; 2011). On the one hand, behavioral training places the main emphasis on the acquisition of technical and physiological skill with little regard for the development for cognitive skills during practice. This approach is also referred to as a non-cognitive or traditional approach to training (Vickers, 2011). On the

other hand, decision training as a cognitive approach to training, where cognitive skill underlying higher levels of performance are trained at the same time with technical and physiological skills. The characteristics of each approach can be witnessed in the instructor's attitude and in the methods used for instruction, practice, and feedback (see Table 1).

Table 1

Characteristics of non-cognitive and cognitive approaches to police use of force training (adapted from Vickers, 2011)

	Behavioral training (physical, technical, non-cognitive)	Decision training (physical, technical, cognitive)
Instruction	Part-to-whole training Simple to complex drills Easy-first instruction Technical emphasis Internal focus of instruction Low use of video models	Tactical whole training Representatively designed drills Hard-first instruction Technique within tactics External focus of instruction High use of video models
Practice	Blocked practice Low variability	Variable practice Random practice
Feedback	Abundant instructor feedback Low use of questioning Low use of video feedback Low learner detection and correction of errors	Bandwidth feedback High use of questioning High use of video feedback High learner detection and correction of errors
Overall	Low levels of learner cognitive effort	High levels of learner cognitive effort

Training informed by pedagogical practices derived from non-cognitive training paradigms often results in instructors (a) talking too much in order to share accumulated wisdom, (b) conducting lots of repetitive drills in order to strengthen stimulus-response bonds, and (c) giving lots of corrective information helping the learner to link the relevant information (Piggott, 2007). In contrast a cognitive approach to training promotes coaching behavior like (a) structuring the training sessions around problems (Jones & Turner, 2006), (b) encouraging creativity, and novel solutions, allowing mistakes to occur, as long as they are not repeated, and (c) keeping in mind that solutions to these problems are not certain either (Piggott, 2007).

Furthermore, there is an "important distinction between immediate performance that accompanies practice and long-term performance which reflects the relative permanence in the capability for the practiced skill (i.e. learning)" (Kantak & Winstein, 2012, p. 219). This distinction is crucial, when challenging learning environments may impair practice performance but enhance long-time retention of a motor skill. There is evidence from research focusing on instruction, practice, and feedback in the training process that differences exist in the improvement of a skill or tactic over the short term compared to the long term (Doane, Sohn, Alderton, & Pellegrino, 1996; Schmidt & Bjork, 1992; Swinnen, Schmidt, Nicholson, & Shapiro, 1990; Weeks & Kordus, 1998). These results show that a behavioral training approach facilitates better immediate improvement of skills and tactics than a cognitive, decision training approach. This type of training paradigm appeals to many instructors and learners, since positive rewards are gained immediately. This leads to the perception of instructors, that their teaching approach is correct, whereas the learner feels like he is mastering the task. Nevertheless, in the long-term, results show a decrease in performance, especially when encountering difficult and stressful conditions (Vickers, 2007;

2011). In contrast, learners experiencing decision training – even though performance may be depressed initially – continue to improve and ultimately perform at a higher level.

In behavioral training, there is often the attempt to switch off the mind in favor of the attainment of rapid automaticity. The problem with this is that the learner will not know why he or she performs well one day, and disastrously the next. Learners that are trained the behavioral way lack the higher-order cognitive skills that let them know what underlies personal performance (Vickers, 2011). Experts in any field rarely let their skills become fully automatic. They are constantly trying to find ways to improve, which involves high levels of cognitive effort and decision-making (Ericsson, 2003). This could be one argument as to why such learners are not able to retain skills over a long period of time.

A coaching pedagogy must be based on an underlying theory of (motor) learning. Learning theories show how different pedagogical approaches work and why. A comparison of the two different training approaches revealed that it might be beneficial in the long-term to rely on a more cognition-oriented coaching style. Nevertheless, there could be times in the training process, when a more behavioral approach seems to be more beneficial. This could be feasible for beginners, when quick results promote motivation.

3 Skill Development in the Use of Force Domain: Some Proposals

For the police use of force training, Staller (2015) argued that, besides the use of scenario-based training (which is usually not used in the beginning of police use of force training), a more decision-orientated training pedagogy should be applied from the beginning. Global strategies include: (a) promoting understanding within the officers, (b) consideration of the short and long term effects when designing learning environments, and (c) a clear focus on decision-making when developing skills for the performance context of real world conflict situations.

3.1 Promoting Understanding

It is crucial for coaches and instructors to understand what they are doing (Abraham & Collins, 2011). In the sport performance domain, research revealed that effective athletes have a good understanding of their own performance and how it impacts teammates and opponents, too (McPherson, 1994; Williams & Davids, 1995). Recent results from expert interviews suggested that this is true for effective self-defense experts (Staller, 2014b). Therefore, we suggest that this could also be true for police officers, especially for long-term development. Consequently, use of force trainers must promote self-awareness and apply pedagogical practices in a way that ensures that officers understand what they are doing and why they may choose certain alternatives for action over others. Drawing from the pedagogical toolbox developed by Abraham and Collins (2011), ideas for promoting understanding in the use of force context include: (a) questions and answers instead of providing direct feedback, (b) setting up buddy coaching exercises and programs, (c) letting officers watch each other with a structured purpose and attention directed to specific elements of a technique or section of tactical performance, and (d) showing a negative demonstration or video and asking participants what can be done better or what improvements can be made (p. 221-223).

3.2 Considering Short and Long Term Results

Schmidt and Bjork (1992) discovered that skill acquisition could be sped up by providing a learning environment that allows for repeated attempts with a high level of feedback. Retention and transfer tests, in contrast, revealed that performance does not last under such circumstances. Correspondingly, learning environments with (a) decreased repetition, (b) increased unpredictability, and (c) reduced feedback produced better results in

exercise, a student is repeating many times *not the means for solving* a given motor problem, but *the process of its solution*, the changing and improving of the means” (p. 205, emphasis in original). In addition to providing opportunities for solving problems, instructors should promote discussions about different solutions and the underlying decision-making processes. We recommend avoiding giving feedback too early in order to let the officers think about the underlying decision-making processes. In line with this, instructors should avoid showing constant solutions to problems.

4 Conclusions

Designing learning environments that ensure optimal skill transfer to the criterion environment is crucial in police use of force training. Recent research on the efficiency of performance in conflict situations in the line of duty indicates that training programs could be optimized with regards to the transferability of skills. Drawing from research of the skill development domain, we suggest a more inclusive approach to training with a focus on the development of decision-making skills in conjunction with the development of motor skills. This approach goes beyond increasing the amount of scenario-based training by focusing on representative learning designs at the very beginning of skill acquisition. Therefore, we suggest revisiting training programs in the use of force domain, which rely on traditional approaches of skill development. Yet, further research aiming at the transferability of skills and the development of optimal learning environments for the use of force domain is needed.

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