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In the 1970s, Egon Bitner offered a critique of police academy training, signified by the ability to train compliant soldier-bureaucrats rather than competent practitioners. Over the years, subsequent training models have been implemented, evaluated, and modified in an attempt to exceed what has been deemed adequate training. This research provides the first of several outcome evaluations as part of a longitudinal study on the efficacy of problem-based learning in a Basic Law Enforcement Academy (BLEA). Data for this research include survey results for the period of 2009–2012. Early results suggest the problematic nature of the dualistic dilemma within police academy training. Discussed are adaptations in the context of this dilemma. Furthermore, the research explores how environmental factors and broader socialization and acculturation processes should be included within subsequent implementations.

Keywords: Basic Law Enforcement Academy, police training, problem-based learning

Introduction

Effective police training is the foundation of modern police services. Subsequently, research on police training encompasses research training at the academy, field training, and routine police training levels. Specific to academy training, research has improved the delivery of curriculum material, as well as the overall academy experience, producing police officers who meet the increasing demands of their respective agencies (Paterson, 2011; Vodde, 2012). With the ambitious goal of improving police training capable of meeting these new demands, a Basic Law Enforcement Academy (BLEA) implemented problem-based learning (PBL) within their curriculum. The research agreement facilitated a broad collection of data encompassing recruit exam scores, recruit assessments of the academy and instructors, and data comprising recruit suggestions for improving the academy. As data collection is continuing, the present study evaluates recruit experiences within this new curriculum.

The transition to the PBL model has not been without hesitation or apprehension by administrators, officers, and training staff. Implementation of PBL within BLEA is one of a few attempts by a state agency to alter dramatically the training method for police. The reason behind transitioning to the PBL model was based in successful model implementations in other fields of training (Bridges & Hallinger, 1996; Gijselaers, 1996; Hmelo-Silver, 2004; Kingsland, 1989; Stinson & Milter, 1996; Woods, 1994), and most notably the stated effect promoting deep content learning (Hmelo-Silver, 2004).

The transition to PBL is not a reflection of a gross inadequacy of the previous (traditional) training model. Rather, the current training model transferred knowledge adequately, but had not been without criticism (see More & Wegener, 1996; Thibault, Lynch, & McBride, 2001; Walker & Katz, 2002). It is through this criticism and attempts to address and overcome the traditional limits that the Criminal Justice Training Commission (CJTC) embraced the PBL training model. Implementation of this new model occurred as an innovative response to the larger goal of creating competent problem-solvers, emphasizing a training curriculum imparting further effectiveness and providing long-term institutional benefits. As noted by Kamien (1993), when discussing the transition within the medical profession to train within PBL, "Medical schools [that fail to implement educational reform] will continue to graduate doctors who are, on the whole, largely adequate, but who could be so much more" (p. 226). According to Kamien (1993), the purpose was to improve on what had been historically acceptable, but with this innovative change, there could be notable improvements within the field of training.

With respect to police training, one of the current issues within police academy training has been the inability

to teach critical thinking and field-based problem-solving skills, while conveying the required legal, administrative, policy, and protocol of the agency (Caro, 2011; Thibault et al., 2001; Vodde, 2012). As Chan, Devery, and Doran (2003) offer, the training process inherently focuses on the latter at the detriment of the former—an unfortunate result of the pressure to meet arbitrary standards. In this capacity, training comes to tabulate *what* is taught, with little discussion on *how* it is taught, and the relevancy of the material (Chan et al., 2003). The resulting effect of this experience is a dualistic dilemma. As agencies employ more sophisticated policing models (problem-oriented policing), or embrace process mechanisms such as CompStat,[1] the importance of training becomes increasingly important (Willis, Mastrofski, & Kochel, 2010). Moreover, the recommendations from Willis et al. (2010) toward aligning community-oriented policing and CompStat into an integrated policing model will inevitably necessitate development and refinement of foundational skills promoting competent problem solvers. In addition, the continued trend toward problem-oriented policing (Reitzel, Leeper-Piquero, & Piquero, 2005), intelligence-led policing (Bullock, 2013; Darroch & Mazerolle, 2012; Ratcliffe, 2012; Schaible & Sheffield, 2012) and continued embracement of the philosophical elements of community-oriented policing (Bayley, 1994) will undoubtedly require that academy training and in-service training stay on the forefront of educational techniques (Haberfeld, 2002; Paterson, 2011).

Seeking to stay at the forefront of training modalities, the state CJTC decided to implement PBL, a model designed around refocusing learning to core job tasks (relevancy), enhancing critical thinking and problem-solving skills, promoting active participation and interaction between students and instructors (engagement), promoting more effective assimilation of material, and improving a participant's ability to integrate new material (Birzer & Tannehill, 2001; Shin, Haynes, & Johnson, 1993). As agencies continue to experience increasing turnover, coupled with retirement, there is a notable gap in hiring that needs to be addressed. Further, the economic reality of the last several years demonstrates that agencies must identify ways to use fewer resources and maintain efficiency and effectiveness. To meet this need, recruiters will need to widen their applicant pools and appeal to a broader range of applicants (Cordner & Cordner, 2011; Holdaway, 2013). However, research suggests that nontraditional recruits may be deterred by traditional lecture-based pedagogy (Birzer, 2003) necessitating refinement of training curricula uniquely tailored to this new wave of recruits.

Appealing to this nontraditional recruit and increasing the training effectiveness and resulting in-service training for officers, the new approach needed to incorporate strategies that have proven to be effective for adult learners (Birzer,

2003; Birzer & Tannehill, 2001; Vodde, 2012). Incorporating PBL within police training is not a new idea. Andragogy, referring to instructor facilitation and the emphasis on self-directed group discussion and active debate, has been a topic of discussion since the 1980s (Brookfield, 1986). However, the relevancy and importance of this approach has only recently become a critical issue in police training as agencies seek effective ways to train recruits (Birzer, 2003; Birzer & Tannehill, 2001).

Efficacy of PBL

The efficacy of PBL is complicated to evaluate and often takes years to carry out, and even then, with often anecdotal information (Belland, French, & Ertmer, 2009; Mennin & Martinez-Burrola, 1986; Vernon & Blake 1993; Walker & Leary, 2009). There are notable validity issues on transitioning to the new model (Colliver, 2000; Walker & Leary, 2009). For example, enthusiasm by administrators, staff, and students can have a direct impact on the evaluation (Wolf, 1993). Knowing this, it is recommended that PBL evaluations be longitudinal and employ a mixed-methods approach. By incorporating both quantitative and qualitative measures into the evaluation and employing a quasi-experimental, matched-sample experimental design, it is more likely the evaluation will be able to determine the efficacy of the model. Additionally, while the efficacy of PBL may remain unclear, an important step during the transition is the opportunity to address the best training practices, identify problem areas, and uncover how staff had overcome those training limits (Dean, Barratt, Hendry, & Lyon, 2003).

Research suggests minimal to moderate efficacy for PBL, with early research suggesting positive results in the superiority of the PBL approach (see Albanese & Mitchell, 1993; Berkson, 1993; Norman & Schmidt, 2001; Vernon & Blake, 1993; Walker & Leary, 2009). However, results are routinely questioned, and some research suggests that PBL has fewer benefits over a traditional training experience with minor adjustments (see Norman & Schmidt, 2001; Walker & Leary, 2009). For purposes of the research here, I use the medical training community as a point of reference because the medical community has the longest history of PBL implementation and has tested the efficacy via several meta-analyses (see Vernon & Blake, 1993; Walker & Leary, 2009). During the first meta-analysis of PBL, Vernon and Blake (1993) noted, "Overall, the results of our meta-analysis support the superiority of the PBL approach over more traditional methods in several of the outcome measures examined" (p. 557). Of the most noted results is the increase in enthusiasm for the model from staff and students (Albanese & Mitchell, 1993). It is this enthusiasm that researchers attribute as an influence
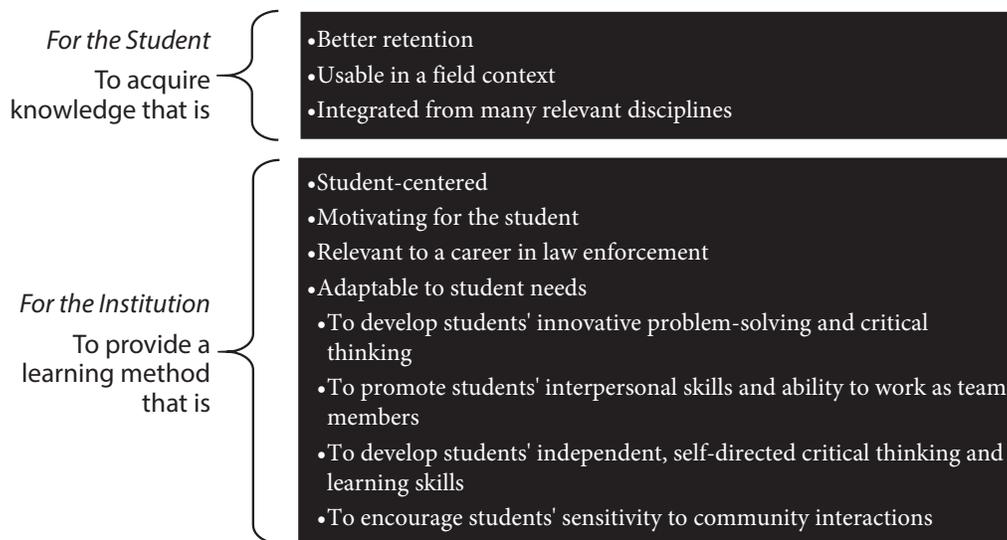
For the Student
To acquire
knowledge that is

- Better retention
- Usable in a field context
- Integrated from many relevant disciplines

For the Institution
To provide a
learning method
that is

- Student-centered
- Motivating for the student
- Relevant to a career in law enforcement
- Adaptable to student needs
- To develop students' innovative problem-solving and critical thinking
- To promote students' interpersonal skills and ability to work as team members
- To develop students' independent, self-directed critical thinking and learning skills
- To encourage students' sensitivity to community interactions

Figure 1. Benefits of PBL. Adapted from Finucane et al. (1998) and Barrows (1983).

in preliminary evaluations as staff and students are motivated to demonstrate results and willingly engage in more challenging curricula (Colliver, 2000).

While it may seem divergent to discuss medical education community implementation of PBL, it must be noted the rationale for using PBL followed the same reasons. The reason has been primarily grounded in the theoretical capacity for PBL to overcome the following criticisms of the traditional model (Des Marchais, Bureau, Dumais, & Pigeon, 1992; Lowry, 1992; Schmidt, 1983):

1. It creates an artificial divide between the basic and clinical sciences.

2. Time is wasted in acquiring knowledge that is subsequently forgotten or found to be irrelevant.

3. Application of the acquired knowledge can be difficult.

4. The acquisition and retention of information that has no apparent relevance can be boring and even demoralizing for students.

From a police training perspective, the first criticism can be extrapolated to the artificial divide between police protocol and the societal and legal issues, which is a primary disconnect in the ability for officers to learn critical thinking and employ innovative problem-solving when out in the field (Bitner, 1970). The remaining criticisms are applicable to traditional training approaches, regardless of discipline. It is for these reasons advocates of PBL offer the model as overcoming the limits of traditional training.

Advantages of Problem-Based Learning

As displayed in Figure 1, research suggests two primary benefits of PBL benefiting the student and institution. This list reflects both qualitative and quantitative data collection from training staff, administrators, students, and meta-analytical approaches (Vernon & Blake, 1993; Vernon, 1995; Walker & Leary, 2009; Wolf, 1993). Additionally, these individuals exist as stakeholders involved in creating the curriculum (Berkson, 1993). Curriculum within PBL reflects the situations students will find themselves in when working in the field and should demonstrate opportunity for problem-solving and critical thinking (Norman & Schmidt, 2001). In addition, curriculum alignment toward PBL provides organizational benefits. Norman and Schmidt (2001) suggest organizations implementing PBL experience improved staff commitment and student motivation to learn. Finucane, Johnson, and Pridaeux (1998) offer improvements within self-directed learning and suggest that adherence to PBL promotes life-long learners (Shin et al., 1993).

Disadvantages of PBL

While evaluations into the efficacy of PBL yield disputed results, there are also several possible disadvantages. Most noted of those disadvantages is the reported inefficiency of the curriculum. Research suggests PBL curriculum covers roughly 80% of what traditional curriculum may cover in the same period (Albanese, 2000; Albanese & Mitchell, 1993; Colliver, 2000; Finucane et al., 1998). Considering the increased resources of the curriculum (e.g., staff time, curriculum development), it is important that the benefit of PBL

exceed the resource costs (Finucane et al., 1998). Colliver (2000) offered a more scathing critique in that there is "no convincing evidence that PBL improves knowledge base and clinical performance, at least not of the magnitude that would be expected given the extensive resources required for the operation of a PBL curriculum" (p. 266). In addition, it takes time for instructors to become familiar with teaching with this model, and as a result, it can increase stress on staff and students (Berkson, 1993; Finucane et al., 1998). While the stress may dissipate as staff and students become familiar with the model, it is increasingly difficult to control for the Hawthorne effect (Colliver, 2000; Finucane et al., 1998), which has been exhibited during early reforms and evaluations within police training (More & Wegener, 1996).

Extrapolating from the medical training PBL evaluations, it can be surmised that police academies employing PBL will encounter similar disadvantages and criticisms. During the developmental process of PBL by the Criminal Justice Training Commission (CJTC), notable resistance against the model occurred. Specifically, resistance toward removing what had become revised and institutionalized training curricula cultivated over many years. Recognizing this specific issue presented a unique opportunity from an evaluation perspective, as the implementation within the medical education community was done so because of considerable commitment, investment, and support of medical training staff and administrators (Engel et al., 1992; Finucane et al., 1998). Implementing PBL within the academy occurred with minimal transition of new training staff, allowing for a similar method.

Methods

The Academy Context

While the research is exploratory, it is important to provide a context to the academy curriculum. The police academy is eighteen weeks of training, encompassing 720 hours of instruction truncated across a dozen curriculum blocks (modules). Within each module block are multiple classes reflecting the overall curriculum block. Each block then concludes with a written, oral, or practical exam with a postexam review. PBL implementation aligns to specific classes and not overall modules. It was determined that some classes would not benefit from a PBL redesign. However, this did not mean that aspects of PBL were not included within the delivery of the content. For example, early in the curriculum, students are introduced to the Basic Law Enforcement Academy (BLEA) Problem Solving Model, reflecting an entire class. Once introduced, the model is incorporated routinely into course discussions. As instructors and students

became accustomed to the implementation of PBL, training, advising, and counseling officer (TAC) instructors and students adapted, producing what can be described as a PBL-lite implementation. Identification of the implementation as such is not pejorative. Rather, adoption of PBL was an ongoing and consistent evolution over time.

PBL in Police Training

PBL incorporates relevant and contextual field-based training scenarios. As students work through scenarios, instructors facilitate the discussion by involving the students in a collaborative educational experience. For police recruits, they are placed into common field situations. For example, one scenario involves processing a traffic stop. Within the scenario, recruits will learn about traffic codes, communication skills, safety protocol, applicable legal standards (e.g., the Fourth Amendment), and many other key knowledge objectives. Previously, recruits would learn each area within a training module, delivered from a lecture-based, noninteractive platform. This traditional approach did not address critical thinking or problem-solving skills. Allowing recruits the opportunity to ask questions, practice a field stop, and understand the relevancy of the curriculum promoted critical thinking and problem-solving skills (Schmidt, 1993).

Another scenario encountered by recruits involves a suspicious person with a weapon at a school. The scene starts with the officer arriving as the person exits the building. As the officer starts the scene, the suspect places his hands back on the door—as if to reenter the building. Recruits respond to the scene, assessing the situation, and explain their thought process. This specific scenario is designed for the recruit to engage the person and use lethal force. However, the scenario, as designed, provides opportunities for rationalizing not using lethal force. Recruits who assess and respond with lethal force and recruits who choose not to respond with lethal force explain their decision, and those specific critical moments of decision-making are discussed in the context of the response.

This specific scenario varies for each officer, allowing for tremendous flexibility and integration of the PBL model. For example, one modification could have the suspect run toward the officer with the knife. Some recruits may respond by attempting to disarm the person and others by switching to their less lethal alternative. To the outside observer, this seems like a good response. However, such a response places the officer and community at greater risk. Some modifications allow the suspect to drop the knife and run at the officer. Does the officer use lethal force? Each modification enables thorough discussion on policy, procedure, and use of force policy within a context-specific scenario.

Survey Response Rates

According to the research agreement, all academy graduates complete the exit survey. The rates of attrition are negligible and are not considered in the analysis. The response rate for the survey is 100%. For this research, there were 470 completed surveys, comprising PBL academy graduates. The original research agreement included 100 traditional and 100 PBL exit surveys. However, issues beyond the control of the research team and the academy resulted in only 21 exit surveys from traditional graduates. The focus of this research will not compare traditional and PBL academy graduates but will instead act as an exploratory study encompassing a longitudinal analysis and overall assessment of the academy experience. Data for this project include responses from classes 635 through 681 covering the period of 2008–2012.

Results

Sociodemographic Analysis

Of the 470 graduates, 454 provided demographic information: 89.4% (n=406) were male and the average age was 29, with a minimum age of 21 and a maximum age of 56. As displayed in Table 1, the majority of respondents were predominately white and non-Hispanic or Latino, reflecting 92.8% (n=298). Concerning education levels, most recruits held either a four-year college degree or some college or trade schooling, reflecting 40% (n=182) and 41% (n=186), respectively. Regarding prior service, 34% (n=146) of recruits had prior military service and 61% (n=381) of recruits possessed some police service experience or associated policing experience. Some recruits did have both prior military and police experience, with 19% (n=89) of recruits having *both* prior military and police experience, 54% (n=249) having *either* military or police experience, and 27% (n=123) of recruits possessing *neither* military *nor* policing experience.

Analysis of the recruits' academy experience (see Table 2) revealed that 87.4% (n=408) of recruits felt the expectations of the academy were clearly defined. Concerning the PBL curriculum, 58.4% (n=274) of recruits agreed that the materials covered in the classroom environment were valuable. However, 22.8% (n=107) of recruits expressed neutrality toward the question, a consistent trend within the curriculum evaluation. Concerning the overall value placed on activities, 57.2% (n=269) of recruits agreed assignments and projects were valuable. Ordering the utility of the curriculum revealed that 47.8% (n=234) of recruits felt the reading assignments were valuable and 60% (n=281) agreed that enough materials were provided preparing them for exams. When asked to evaluate collaborative work, 63.7% (n=298) of recruits considered group work valuable, and a slightly higher

Table 1. Frequencies and percentages for sociodemographic variables.

Variable	N	Percent
Gender		
Male	406	89.4
Female	48	10.6
Totals	*454*	*100.0*
Age		
20–35	135	31.7
26–30	148	34.7
31–35	70	16.4
36–40	45	10.6
41–45	18	4.2
46–50	7	1.6
51–55	2	.5
56–60	1	.2
Totals	*426*	*100.0*
Race		
White or Caucasian	298	92.8
American Indian or Alaska Native	5	1.6
Black or African American	4	1.2
Asian	12	3.7
Native Hawaiian or Pacific Islanders	2	0.6
Totals	*321*	*100*
Ethnicity		
Hispanic/Latino or Hispanic/Latina		
Yes	29	7.2
No	374	92.8
I do not wish to provide this information		
Education Level		
Some School no diploma	5	1.1
High school diploma or GED	44	9.7
Some college, Trade school	186	40.9
Completed 4-year degree	182	40.0
Some Graduate Work	12	2.6
Hold Advanced Degree	26	5.7
Totals	*455*	*100.0*

Table 2. Academy experience.

Variable	N	Percent
Experience Ought to Reflect		
Paramilitary Environment	147	31.4
Balanced	288	61.5
Community College	33	7.1
Totals	*468*	*100.0*
Experience Ought to Reflect (Traditional)		
Paramilitary Environment	11	52.4
Balanced	9	42.9
Community College	1	4.8
Totals	*21*	*100.0*

percentage of recruits felt outside classwork (homework) was suitable at 64.6% (n=303). In evaluating the overall PBL curriculum, 60.6% (n=279) believed the curriculum as designed would prepare them for patrol.

Evaluations of the academy show that 88.9% (n=402) of recruits stated that the overall academy was "just right." Looking to the polar ends of the evaluation, only 1.1% (n=5) felt the academy was "too hard," with 10% (n=45) of recruits expressing the academy as "too easy." When asked to evaluate the atmosphere to that of a college environment, 37.1% (n=174) disagreed that their experience reflected a college environment, saying that it was more paramilitary oriented.[2] Additionally, 38% (n=178) felt the academy reflected a more traditional college environment.

When asked to suggest how the academy *ought* to be oriented (see Table 3), 61.5% (n=288) of recruits stated that the academy experience should offer a balanced experience. Concerning the paramilitary structure and atmosphere, 31.4% (n=147) of recruits supported this approach, with 7.1% (n=33) of recruits stating that the academy ought to mirror a community college environment. When comparing these results to those of the traditional class (n=21), 52.4% (n=11) of recruits preferred a paramilitary environment, 42.9% (n=9) preferred a balance of the two environments, and 4.8% (n=1) said that a community college environment would be more suitable.

Further analysis of the paramilitary perspective revealed interesting gender and prior service results. Nearly one-third of military (36%, n=53) and nonmilitary (30%, n=84) recruits believed the academy should reflect a paramilitary environment. Taking into consideration prior service, 30% (n=37) of those with no prior military or policing experience wanted a more paramilitary experience. Additionally, of those with no prior service, 66% (n=81) preferred a more balanced approach, and 3% (n=4) preferred a more community college experience, which was the lowest identification across any of the units of analysis. At a gender level, 22% (n=11) of female recruits and 32% (n=131) of male recruits signaled that the academy should reflect this orientation.

When asked to assess the relative importance of academy activities, using a predetermined list of activities, (see Table 4) most recruits believed practical-based activities were important, with "mock scenes" and "hands-on practice" being the most valuable academy activity at 62.7% (n=293) and 63.6% (n=297), respectively. There was a significant decrease

Table 3. Gender, prior service, and academy experience.

Variable	Para-Military		Balanced		Community College		Total
	N	%	N	%	N	%	N
Gender and Academy Experience							
Male	131	(32%)	245	(60%)	28	(7%)	404
Female	11	(22%)	32	(66%)	5	(10%)	48
Prior Military Service and Academy Experience							
Military	53	(36%)	83	(57%)	9	(6%)	145
Non-Military	84	(30%)	175	(62%)	21	(7%)	280
Military Service, Police Service, and Academy Experience							
No Prior Service	37	(30%)	81	(66%)	4	(3%)	122
Either Police or Military	77	(31%)	150	(60%)	22	(9%)	249
Both Police and Military	31	(35%)	50	(57%)	7	(8%)	88

Table 4. Valuable academy activities.

Variable	N	Percent
Most Important Activity to Acquire Skills and Knowledge[*]		
Group Work Helpful	21	4.5
Individual Work	12	2.6
Hands on Practice	297	63.6
Lecture	27	5.8
Mock Scenes	293	62.7
Total	*467*	

[*]Respondents were able to mark more than one of the activities.

Table 5. Moment of confidence.

Variable	N	Percent
Extremely Early Developed Confidence (Weeks 1–3)	19	4.1
Early Developed Confidence (Weeks 4–7)	14	3.0
Moderately Developed Confidence (Week 8–11)	61	13.2
Late Developed Confidence (Weeks 12–15)	158	34.2
Extremely Late Developed Confidence (Weeks 16–19)	164	35.5
Yet to Develop Confidence at the Academy	46	10.0
Totals	*462*	*100.0*

in the acknowledgment of importance across the other common activities, with only 4.5% (n=21) selecting "group work" 5.8% (n=27) "lecture" and only 2.6% (n=12) selecting "individual work."

Theoretically, PBL curriculum is designed to not just improve the acquisition of knowledge, but has also been linked to earlier acquisition of confidence as well as long-term retention and curriculum satisfaction (Hmelo-Silver, 2004; Strobel & van Barneveld, 2009). However, academy recruits pointed out that it took an average of 14 weeks to become confident in their ability to perform the duties of a patrol officer (see Table 5). Moreover, 10% (n=46) of recruits graduated from the academy without having developed confidence in their ability to act as a patrol officer. Table 5 provides the review of the confidence acquisition.

Concerning recruit evaluation of training staff, (see Table 6) 67.8% (n=319) expressed that instructors used class time effectively, though nearly a quarter (24.5%) were neutral in their response. Recruits evaluated instructor engagement and individual knowledge high at 91% (n=423) and 90% (n=416), respectively. As the academy incorporates outside instructors, most recruits evaluated these instructors as actively involved and displaying an appropriate level of knowledge conducive to gaining the necessary knowledge and skills, at 72% (n=332) and 90% (n=422), respectively. Last, recruits evaluated the learning environment of the training academy with 84% (n=390) offering that instructors created a positive learning environment.

Analysis of the Open-Ended Questions

Three open-ended questions underwent content analysis and coding. These questions elicited suggestions for improving the academy experience, advice for future recruits, and suggestions for improving success at the academy. There were 880 responses to the open-ended questions. Two coders were

used and a codebook was developed using the principles for thematic analysis (Attride-Stirling, 2001). The results of the intercoder reliability test yielded 95% matching for all content analysis. Coding inconsistencies occurred in situations in which two themes were expressed within the response, and as is common in coding many qualitative responses, there were a few coding errors in which items were coded incorrectly.

Suggestion to Improve Academy

Eight global themes emerged within the thematic analysis, representing: Paramilitary, PBL, Curriculum, General Academy, Anti-PBL, Pro-PBL, Anti-Paramilitary, and Dualism (see Table 7). When offered the opportunity to provide suggestions toward improving the training academy, the responses varied from short statements to detailed responses, and were predominately focused on improving the curriculum to align with testing material, mock scenes, and problem-based learning, with 36.3% (n=70) recommending changes in these areas. The following excerpt represents the challenges experienced within PBL:

> PBL needs to change and grow as recruits become better equipped & more knowledgeable. Time given to utilize PBL wheel should start off with a lot of time and towards end of academy be much shorter (2 mins) to use PBL wheel, which would be more reflective of actual time provided in most instances while on patrol.

Concerning the paramilitary recommendations, 10.9% (n=21) of recruits suggested that the academy should incorporate more focus on physical training, defense tactics, fight scenes, or generally have a more militaristic atmosphere to

Table 6. Instructor evaluation.

Variable	N	Percent
Instructors Used Class Time Effectively		
Strongly Disagree	3	.6
Disagree	33	7.0
Neutral	115	24.5
Agree	259	55.1
Strongly Agree	60	12.8
Totals	*470*	*100.0*
TAC Actively Involved		
Strongly Disagree	1	.2
Disagree	10	2.1
Neutral	33	7.1
Agree	240	51.4
Strongly Agree	183	39.2
Totals	*467*	*100.0*
TAC Had Appropriate Knowledge		
Strongly Disagree	1	.2
Disagree	8	1.7
Neutral	39	8.4
Agree	205	44.2
Strongly Agree	211	45.5
Totals	*464*	*100.0*
Outside Instructors Involved		
Strongly Disagree	5	1.1
Disagree	20	4.3
Neutral	105	22.7
Agree	237	51.3
Strongly Agree	95	20.6
Totals	*462*	*100.0*
Outside Instructor Had Appropriate Knowledge		
Strongly Disagree	2	.4
Disagree	8	1.7
Neutral	35	7.5
Agree	241	51.6
Strongly Agree	181	38.8
Totals	*467*	*100.0*
Instructor Created Positive Environment		
Strongly Disagree	1	.2
Disagree	15	3.2
Neutral	57	12.3
Agree	241	52.1
Strongly Agree	149	32.2
Totals	*463*	*100.0*

prepare officers for the real-world of police work. However, 5.7% (n=11) of recruits said that this atmosphere undermined the developing of their knowledge, acquisition of skills, and in some cases was incongruent with "real police work," as indicated here by one such recruit: "I thought the academy was geared too much towards a military organization. After being on patrol and at my dept. I see that it is not like that at all." Echoing this response, another recruit was concerned with the overt emphasis on fighting: "I was trained to fight. The curriculum was based on physical combat skills, not communication or personal skills. This is the area where a balance needs to occur." Building on this specific point, another recruit specifically identified a training method as detrimental to the overall academy experience. As expressed, "Your 'fight for life' was taken too far. I observed numerous people get unnecessarily injured."

The dualistic dilemma between the two learning modalities represents a global theme emerging within the analysis. When faced with two conflicting philosophies, recruits often embrace the one most aligning with their individual construction of what it means to police and most importantly what appears to be the most respected. For example, a common dilemma noted in the literature on police training is when recruits are told to forget what they learned in the academy by a field training officer, or when academy instructors emphasize specific attributes as necessary to be an officer, which runs contrary to activities they are completing in coursework. Recruits expressed frustration, confusion, and impediment in the acquisition of the knowledge, skills, and abilities necessary to function on patrol. A comment offered by a recruit typifies this very issue:

> If the academy is going to be run as a college class, then do so. Either run it as a paramilitary organization or a college class. Do not try to mix the two. It leads to a great deal of confusion.

Much of this sentiment was reflected in the comments coded as anti-PBL, with 8.8% (n=17) expressing clear statements of, "Get rid of PBL!" to more elaborated points such as, "Fewer classes not related to our immediate future. Such as ACCESS, Department of Licensing [Reference to firearm licensing], Emotional Intelligence."

Concerning problem-based learning, 16.6% (n=32) of recruits believed the academy needed more mock scenes, practical experience, and field training (as part of the academy experience). This figure does not include those recruits expressing support and expansion of PBL. Surprisingly, while recruits were positive of the new training, only 3.1% (n=6) indicated this recommendation.

When presented with an opportunity to speak to the curriculum, the overwhelming trend drew attention to the

Table 7. Frequencies and percentages for suggestion to improve academy.

Variable	N	Percent
Paramilitary	21	10.9
Anti-Paramilitary	11	5.7
Problem-Based Learning	32	16.6
Pro-Problem Based Learning	6	3.1
Anti-Problem-Based Learning	17	8.8
Curriculum	70	36.3
General Academy	28	14.5
Dualism	8	4.1
Totals	*193*	*100.0*

inconsistency between what was being taught in the classroom and what was on exams. This is the same issue discussed by Chan et al. (2003) over a decade prior in her analysis of police academy training and by Bitner (1970) decades prior. In fact, the content analysis yielded trends overwhelmingly negative. Consider the following responses:

> Too much military environment. PBL does not work. Questions are not answered, and we teach ourselves. Need better demo's and instruction. I don't feel prepared for [field training].

> The curriculum is full of "fillers." These blocks of training are useless to my future career and can be dropped for more useful training. An example of one of these "filler" classes is tactical thinking.

> I think that there should be more examples of how to do skill steps. Something along the lines of: tell, show, do. It would be really helpful to see at least one pair of TAC officers do a [training scenario] completely.

> Consistency of curriculum needs improvement. Needs to be a more defined progression of learning. EXAMPLE: Patrol Procedures, Criminal Law close together for the 1st half of academy. Find a way to intertwine the drug, K-9, classes along with Criminal Law, + Patrol Procedures.

This inconsistency is problematic as noted by several recruits. Often recruits would express frustration with the dualism in the academy, requesting more mock scenes and problem-solving exercises, at the same time noting that PBL does not work. This was even clearer when analyzing the open-ended responses across recruits, specifically several recruits who provided Anti-PBL feedback, expressing how important mock scenes were (problem-based scenarios) and feedback and discussion on how such scenes were handled (core components of PBL) while lauding the ineffectiveness of PBL.

From an evaluation perspective, this is deeply concerning as it appears the key ideas of PBL are assigned a negative connotation despite these activities being requested for further incorporation into the curriculum. From the analysis, it became clear that specific parts of PBL conflicted with the overall academy experience (e.g., emotional intelligence). However, most recruits expressed interest in more PBL-oriented activities.

Recruit Advice

There were 345 responses to this open-ended question (see Table 8). The theoretical foundation for the content analysis reflected the belief that the PBL model increases cohesiveness among training classes and organizational commitment (Faidley, Evensen, Salisbury-Glennon, Glenn, & Hmelo , 2000). The coding used for this content analysis reflected five global themes: Positive Advice, Negative Advice, Physical Fitness Advice, Focusing on Defensive Tactic Training, or recommending Extra Training. As expected, recruit advice was overwhelmingly positive, with only 5.2% (n=18) of recruits providing negative advice. Examples of negative advice ranged from the extremes of, "Shut your mouth for 5 months" to the more subdued, "Keep your mouth shut and study because the material is horrible," or:

> To be prepared to not get answers to your questions for a long time and dig through all the info on the thumb drive to find it possible if all else fails check department policy or call a representative.

One recruit offered a more detailed analysis:

> Take it day by day and just go along with the movements most of the stuff they go over and TRAIN us is not for our safety it keeps [redacted] State safe from lawsuits if something happens out on the street. "We didn't train them that way."

Despite these negative comments, it must be noted that, overwhelmingly, the advice provided was positive, and more importantly, many of the recruits took time to provide detailed advice. Consider the following:

> Take advantage of instructors willing to do extra training before & after hours. This training was some of the most valuable I received. The instructors aren't limited to any specific curriculum during this time & the group is smaller, which allows for more training, questions, etc.

Table 8. Frequencies and percentages for advice for recruits.

Variable	N	Percent
Positive Advice	188	54.5
Negative Advice	18	5.2
Physical Fitness Advice	54	15.7
Defensive Tactics	24	7.0
Extra Training	61	17.7
Totals	*345*	*100.0*

One very minor change in a scene can change the outcome. So, when different instructors give different answers, they MAY both be correct. Look into in and figure out the differences that cause the outcome to be different. It's NOT black & white.

Have as few outside obligations as possible (ideal if you do not have children, are not a single parent, do not hold any other job, etc.). There are many extracurricular activities to participate in if you have the extra time.

I would advise them to ask lots of questions. Even with the slightest hint of confusion, do not be worried if your fellow recruits look at you like a moron, ask, make the TACs explain it all.

Identify those qualities/tools/attributes used by your department in instructors and foster those qualities. You will be exposed to good & bad, use both experiences to help you develop your appropriate officer presence.

Comments like these are consistent with prior research on the academy. As recruits transition through the academy, they see themselves as part of something larger. This socialization process and acculturation exists across generations. Therefore, the overwhelmingly positive advice provided by recruits allows for a smoother transition both to the academy (for new recruits) and to the organization (for the new officers). Most notable within the positive advice offered by recruits was the variation in advice. Recruits recognized potential issues and preempted those with specific advice for how to overcome them.

Additional themes identified included taking part in extra training (17.7%, n=61), defensive tactics (7%, n=24), and physical fitness advice (15.7%, n=54). A notable portion of the recruits offered that they never felt prepared for defensive tactics training and that it was important for recruits to seek out extra training opportunities, to prepare before the academy, and to continue physical fitness training. Many of the comments connected to recruits preferring a more paramilitary structure, reflecting in advice such as, "Devote every second of free time you have to [defensive tactics] practice, you won't have enough scheduled hours to be proficient."

Moment of Confidence

On average, recruits took 14 weeks to develop their confidence, with most developing confidence late in the academy. To better understand what specific activities fostered confidence, 62% (n=124) of recruits pointed to mock scenes allowing them to develop their confidence (see Table 9), which is consistent with prior literature. Similar to the research of Chan et al. (2003), recruits appear to acquire confidence and skill acquisition through replication. Replicating what is taught displays mastery of concepts, and specific to police training, undertaking a driving-under-the-influence (DUI) stop, effecting an arrest, and responding to a domestic disturbance are real-world activities where succeeding and occasionally failing these activities provides opportunity for developing confidence. Confidence acquisition is then amplified when constructive feedback is present and a dialog emerges between recruit and instructor. Overcoming an obstacle was incredibly important for recruits. Consider the following two points expressed by two recruits:

Struggling through Final mock scene testing, making a large number of errors, but recognizing them and discovering that I have the tools necessary to work through problems.

When we had more hands on calls, we were able take calls and put into place the things we learned. On call criticism is the best. Just like [field training] we will go to calls and find out what was good or bad.

Specific to training, advising, and counseling officer (TAC) involvement, 5.5% (n=11) of recruits noted that it was the feedback, advice, and even constructive criticism instilling confidence in their ability to be a patrol officer. As one recruit expressed, "After getting remedial training for failing the [defensive tactics] high scene . . . the insight from many TACs was what I needed." Moreover, specific TAC officers could mediate the paramilitary environment, which was inhibiting confidence, as one recruit stated,

After many days and nights spent with the right TAC officer. After many mock scenes. I didn't learn a thing until the para military atmosphere calmed down. Too much [physical training] AND [defensive tactics] to focus.

While some recruits felt that the paramilitary environment restricted their acquisition of confidence, 13.5% (n=27)

Table 9. Frequencies and percentages for moment of confidence.

Variable	N	Percent
Mock Scenes (PBL)	124	62.0
Paramilitary (DT, Firearms, EVOC)	27	13.5
TAC Involvement (Engagement, Confirmation, Acceptance)	11	5.5
Time	21	10.5
Academy Did Not Instill Confidence	9	4.5
Curriculum	8	4.0
Totals	*200*	*100.0*

felt that mastering firearms training, defensive tactics, and vehicle tactics—with several specifically noting "fight for life" crisis scenes—and firearms competence was their critical moment in developing confidence.

Sometimes, confidence acquisition did not occur through a specific activity. Rather, time at the academy provided confidence. As expressed by several recruits, only time will provide confidence when they are in the field, with 10.4% (n=21) of recruits signaling as such. A unique characteristic of the thematic analysis was the denotation of the field training officer (FTO) confirmation, which fosters an intriguing question: Why are FTO or police training officer (PTO) confirmations necessary and not the TAC instructor for gaining confidence? The following excerpts represent this point.

Just can't know w/o FTO.

I'm confident in my abilities, but my FTO experience will show me exactly where my skill level is at.

I spoke plainly w/several of the TAC officers asking how long it took to become comfortable w/the work. Most said 3 years. I felt better knowing I was not the only person who was lost.

As reflected above, the FTO did not necessarily provide confidence. Rather, the FTO confirmed whether or not the recruit was in fact prepared. It was not merely "doing" the job, but having another verify that one was "doing it correctly." Only 4% (n=8) of recruits felt that passing a written exam provided confidence. The range of responses and identification of confidence reflected a unique common theme in those not gaining confidence, specifically when the principles of PBL were not adhered. For example:

We were never given the opportunity to correct our mistakes. If we were wrong we were told so & no corrective opportunity was given.

There were times when I could see it [within] grasp, but the mock scenes were so that you never had base knowledge to know what to do + you ended feeling stupid, ineffectual and overall inadequate.

Resources to Improve Academy

The content analysis yielded four primary thematic areas highlighting improvements to the academy: more paramilitary focus (Defensive Tactics, Tasers, and Weapons Training), PBL (Mock Scenes with feedback and practical experience), Curriculum (complete and useful textbooks), and General Academy (better internet and general resources). There were 142 responses coded for this question, with 35.2% (n=50) of recruits recommending more PBL elements. These elements focused on mock scenes and practical (hands-on) training. Concerning practical training, 26.8% (n=38) recommended more paramilitary training, and an identical number offering improvements within the curriculum were necessary. Just over 11% (n=16) believed the academy needs to renovate and improve the overall facility.

Discussion

The goal of the new training model was to improve the acquisition of relevant knowledge, skills, and abilities through a new training curriculum aligning with the best practices of PBL. Results suggest most recruit experiences within the new academy were positive. Interestingly, when bootstrapping the traditional academy survey results, the results were not significantly different—although this is less reliable, as there were few overall surveys collected. While the descriptive and exploratory nature of this research is limited to a within-cohort analysis, I noted several interesting findings.

Dualistic Dilemma

Mainly, the dualistic dilemma within academy training is a source of continued research. While Bitner (1970) had introduced aspects of this dilemma, early results suggest that the paramilitary atmosphere (either directly or indirectly manifesting) is impeding the acquisition of knowledge, skills, and abilities for some recruits. Dualism does not manifest directly in the atmosphere of training, emphasis on specific activities, or in the content addressed. Rather, this dualism is an amalgamation of conflict stemming from the individual or organizational construction of what it means to "police" and what is necessary to "police." This dualism is not new; it exists as

numerous concepts across police and security literature. By other names, it presents as axiological conflict, wherein what is taught in the academy is not necessarily what is needed to police. Even more broadly, this concept exists under the expectancy violations theory. For example, in the context of academy training and PBL, emotional inventorying has been a consistent source of conflict. How does emotional inventorying connect to police work? While it is important for an officer to understand their emotional state, until this activity is connected to police work, it will hold little value to a recruit. Alternatively, while officer safety is tantamount, valuing physical skill (hard skill) acquisition over knowledge (soft skill) acquisition places unrealistic expectations of what it means to police upon recruits. Training in hard and soft defensive skills should be co-occurring, developing the necessary skills in not merely successful deployment but also in the capacity to transition fluidly between each skill at the peak of emotional stress. Thus, an officer with the capacity to transition from a defensive tactic simulation to a scene requiring verbal de-escalation places hard and soft skill acquisition on the same level.

Implementation (In)congruence

An assumption with implementing PBL was its congruence with training across any discipline. The premise of a teaching modality is that it can span content, which is to say that content may differ but content acquisition and retention will remain nearly the same. However, the unique attribute within police training compared to that of medical training is the atmosphere of the environment, namely the paramilitary activities and associated atmosphere present in police training. This is similar to the results of Chan et al. (2003) when discussing physical training. As discussed prior, the paramilitary orientation of the academy appears to influence knowledge and skill acquisition and retention, and for some recruits, this atmosphere further restricted confidence acquisition.

Paramilitarism

Paramilitarization has been a concern for decades within the police service, spanning the organization, tactics, equipment, and training (see Balko, 2013; Kraska, 2001). As the results reveal, there is notable conflict within the academy between the emphasis on physical skills and knowledge. As officers acquired their knowledge of "what works," they adapted those new experiences to their present environment. While recruits universally recommended practical and hands-on activities, the atmosphere of some activities was overall detrimental to their educational experience. Fundamentally, implementers should not have asked if PBL was congruent with police training, but rather if the police training atmo-

sphere and perspective was congruent with PBL. Nearly one-third of those with neither police nor military prior experience preferred a more paramilitary atmosphere.

Prior research subsumes the academy as a means of transference of paramilitarism. However, results suggest that there is more complexity in the transference based on the expectations of those recruits whose experience is limited in the police service, and yet their academy expectations take on aspects disconnected from the reality or practicality of police work. As PBL takes into consideration, the lived experiences of all learners—those experiences and expectations of the learner—come to shape PBL. This research speaks merely to the academy experience and expectations, but future research ought to explore the recruit (learner) and his/her acquisition of the attitudes, behaviors, and norms reflecting what it means to police. Selection and recruitment have been common areas of research for decades (see Bitner, 1970), and as police services throughout the nation find themselves under more scrutiny with calls for greater transparency and accountability, renewed interest in recruit selection and PBL are necessary to improve the academy experience and outcomes.

Laboriousness of PBL

In returning to the points of Chan et al. (2003) in their study on the police academy, this dualistic dilemma is not inherently linked to paramilitarism, though it is a contributing factor. Rather, PBL is inherently more difficult because it tasks the learner with being active and involves them in deeper problem solving, removing them from a role of passivity in their learning. Looking at the background of recruits and the current state of educational training within the United States, the majority of these recruits have experienced a traditional lecture-based model. Forcing them into active learning is likely stressful, which is only compounded by the stressful nature of police academy training.

Recalibrating PBL

Subsequently, implementers of PBL within police academies have missed a potential inhibitor, namely, the academy structure, atmosphere, and recruit expectations. After reflecting on the curriculum, implementation, and results of the PBL curriculum, a newly designed approach has been developed at this academy, with the intent of mediating the paramilitary structure and inherent dualistic dilemma within academy training. The revised structure will feature a truncated, traditional training curriculum reflecting rote memorization tasks (i.e., criminal law and criminal procedure), co-occurring with PBL activities such as classroom and mock training activities, including simulations. As results suggest, police recruits acquire confidence primarily through practice.

This revised model takes into consideration the importance of practice for recruits emphasizing the "real-world" practice co-occurring with elements of PBL. This ongoing refinement of the academy may transition away from a typical PBL modality, but the revised curriculum adapts the best features of PBL. As PBL researchers have articulated for decades, adaptation is the cornerstone of learning. Continued refinement is not the exception but the norm. In the context of this research, the implementation and continued refinement of PBL within a police academy cannot become a blueprint for other agencies. Rather, the results of this exploratory study suggest that the complexity of PBL exceeds the curriculum revisions. The question innovators, implementers, and researchers must ask is when and how PBL may be adapted to the structure, atmosphere, curriculum, and expectations of the academy, staff, and, and recruits.

Conclusion

Often is the criticism denoting, why change? Why invest considerable resources to change the curriculum and the method of delivery, when traditional training methods are acceptable? I would offer that over four decades ago, Bitner (1970) stated that the primary issue within academic training is the focus on training compliant solider-bureaucrats rather than not competent practitioners. There is no discounting that the training we have is adequate, but as Kamien (1993) so eloquently stated decades earlier, we must ask ourselves if adequate is what we want in our police officers.

Acknowledgments

Notes

1. CompStat is a performance management tool emphasizing analysis of crime and disorder data and strategic problem solving.

2. For the purposes of this research, paramilitary environment refers to strict command structures, dogmatic emphasis on military protocol, strict rule enforcement, and indoctrination of adherence to rules and procedures with minimal opportunity to engage in critical thinking or encouragement of asking questions to understand not what is done, but why

something is done in a specific manner (the antithesis of problem-based learning).

References

Albanese, M. (2000). Problem-based learning: Why curricula are likely to show little effect on knowledge and clinical skills. *Medical Education, 34*(9), 729–738.

Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: A review of literature on its outcomes and implementation issues. *Academic Medicine, 68*(8), 52–81.

Attride-Stirling, J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, 385–405.

Balko, R. (2013). *Rise of the warrior cop: The militarization of America's police forces*. New York, NY: PublicAffairs.

Bayley, D. (1994). *Police for the future*. New York, NY: Oxford University Press.

Belland, B. R., French, B. F., & Ertmer, P. A. (2009). Validity and problem-based learning research: A review of instruments used to assess intended learning outcomes. *Interdisciplinary Journal of Problem-Based Learning*, *3*(1), 5. http://dx.doi.org/10.7771/1541-5015.1059

Berkson, L. (1993). Problem-based learning: Have the expectations been met? *Academic Medicine, 68*, 79–88.

Birzer, M. L. (2003). The theory of andragogy applied to police training. *Policing: An International Journal of Police Strategies and Management, 26*(1), 29–42. http://dx.doi.org/10.1108/13639510310460288

Birzer, M. L. & Tannehill, R. (2001). A more effective training approach for contemporary policing. *Police Quarterly, 4*(2), 233–252. http://dx.doi.org/10.1177/1098611101129197815

Bitner, E. (1970). *The functions of the police in modern society*. New York, NY: Oelgeschlager, Gunn & Hain.

Bridges, E. M., & Hallinger, P. (1996). Problem-based learning in leadership education. In L. Wilkerson & W. Gijselaers (Eds.), *Bringing problem-based learning to higher education: Theory and practice: New directions in teaching and learning, No. 68* (pp. 53–61). San Francisco, CA: Jossey Bass.

Brookfield, S. (1986). *Understanding and facilitating adult learning*. San Francisco, CA: Jossey-Bass.

Bullock, K. (2013). Community, intelligence-led policing and crime control. *Policing and Society, 23*(2), 125–144. http://dx.doi.org/10.1080/10439463.2012.671822

Caro, C. A. (2011). Predicting state police officer performance in the field training officer program: what can we learn from the cadet's performance in the training academy? *American Journal of Criminal Justice, 36*(4), 357–370. http://dx.doi.org/10.1007/s12103-011-9122-6

Chan, J. B., Devery, C., & Doran, S. (2003). *Fair cop: Learning the art of policing*. Toronto, Canada: University of Toronto Press.

Colliver, J. (2000). Effectiveness of problem-based learning curricula: Research and theory. *Academic Medicine, 75*(3), 259–266.

Cordner, G., & Cordner, A. (2011). Stuck on a plateau? Obstacles to recruitment, selection, and retention of women police. *Police Quarterly, 14*(3), 207–226. http://dx.doi.org/10.1177/1098611111413990

Dean, S. J., Barratt, A. L., Hendry, G. D., & Lyon, P. (2003). Preparedness for hospital practice among graduates of a problem-based, graduate-entry medical program *Medical Journal of Australia, 178*(4), 163–166.

Des Marchais, J. E., Bureau, M. A., Dumais, B., & Pigeon, G. (1992). From traditional to problem-based learning: A case report of complete curriculum reform. *Medical Education, 26*(3), 190–199. http://dx.doi.org/10.1111/j.1365-2923.1992.tb00153.x

Darroch, S., & Mazerolle, L. (2012). Intelligence-led policing: a comparative analysis of organizational factors influencing innovation uptake. *Police Quarterly, 16*(1), 3–37. http://dx.doi.org/10.1177/1098611112467411

Engel, C. E., Browne, E., Nyarango, P., Akor, S., Khwaja, A., Karim, A. A., & Towle, A. (1992). Problem-based learning in distance education: A first exploration in continuing medical education. *Medical Education*, 26(5), 389–401.

Faidley, J., Evensen, D. H., Salisbury-Glennon, J., Glenn, J., & Hmelo, C. E. (2000). How are we doing? Methods of assessing group processing in a problem-based learning context. In D. H. Evensen & C. E.Hmelo (Eds.), *Problem-based learning: A research perspective on learning interactions* (pp. 109–135.) Hillsdale, NJ: Erlbaum.

Finucane, P. M., Johnson, S. M., & Prideaux, D. J. (1998). Problem-based learning: Its rationale and efficacy. *Medical Journal of Australia, 168*(9), 445–448. http://dx.doi.org/10.1016/S0307-4412(98)00220-9

Gijselaers, W. H. (1996). Connecting problem-based practices with educational theory. *New Directions for Teaching and Learning, 1996*(68), 13–21. http://dx.doi.org/10.1002/tl.37219966805

Haberfeld, M. R. (2002). *Critical issues in police training.* Upper Saddle River, NJ: Prentice Hall.

Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review,16*(3),235–266. http://dx.doi.org/10.1023/B:EDPR.0000034022.16470.f3

Holdaway, S. (2013). Police race relations in the Big Society: Continuity and change. *Criminology and Criminal Justice, 13*(2), 215–230. http://dx.doi.org/10.1177/1748895812474283

Kamien, M. (1993). The reform of medical education. *Medical Journal of Australia,* 158, 226-227.

Kingsland, A. J. (1989). The assessment process in architecture at Newcastle. In B. Wallis (Ed.), *Problem-based learning: The Newcastle workshop. Proceedings of the ten-year anniversary conference* (pp. 121–130). New South Wales, Australia: University of Newcastle.

Kraska, P. B. (2001). Playing war: Masculinity, militarism, and their real world consequences. In P. B. Kraska & V. E. Kappeler (Eds.), *Militarizing the American criminal justice system* (pp. 141–157). Boston, MA: Northeastern University Press.

Lowry, S. (1992). What's wrong with medical education in Britain? *British Medical Journal, 305*(6864), 1277–1280.

Mennin, S. P., & Martinez-Burrola, N. (1986). The cost of problem-based vs. traditional medical education. *Medical Education, 20*(3), 187–194. http://dx.doi.org/10.1111/j.1365-2923.1986.tb01166.x

More, H. W., & Wegener, W. F. (1996). *Effective Police Supervision* (2nd ed.). San Francisco, CA: Jossey-Bass.

Norman, G. R., & Schmidt, H. G. (2001). Effectiveness of problem-based learning curricula: Theory, practice and paper darts. *Medical Education, 34*(9), 721–728. http://dx.doi.org/10.1046%2fj.1365-2923.2000.00749.x

Paterson, C. (2011). Adding value? A review of the international literature on the role of higher education in police training and education. *Police Practice and Research, 12*(4), 286–297. http://dx.doi.org/10.1080/15614263.2011.563969

Ratcliffe, J. H. (2012). *Intelligence-led policing.* London, UK: Routledge.

Reitzel, J. D., Leeper-Piquero, N., & Piquero, A. R. (2005). Problem-oriented policing. In R. G. Dunham & G. P. Alpert (Eds.), *Critical issues in policing* (5th ed., pp. 419–431). Long Grove, IL: Waveland Press.

Schaible, L. M., & Sheffield, J. (2012). Intelligence-led policing and change in state law enforcement agencies. *Policing: An International Journal of Police Strategies & Management, 35*(4), 761–784.

Schmidt. H. G. (1983). Problem-based learning: Rationale and description. *Medical Education, 17*(1), 11–16. http://dx.doi.org/10.1111/j.1365-2923.1983.tb01086.x

Schmidt, H. G. (1993). Foundations of problem-based learning: some explanatory notes. *Medical Education, 27*(5), 422–432. http://dx.doi.org/10.1111/j.1365-2923.1993.tb00296.x

Shin, J. H., Haynes, R. B., & Johnson, M. E. (1993). Effect of problem-based, self-directed undergraduate education on lifelong learning. *Canadian Medical Association Journal, 148*(6), 969–976.

Stinson, J. E., & Milter, R. G. (1996). Problem-based learning in business education: Curriculum design and implementation issues. In L. Wilkerson & W. H. Gijselaers (Eds.),

Bringing problem-based learning to higher education: Theory and practice. New Directions For Teaching and Learning Series, No. 68 (pp. 32–42). San Francisco, CA: Jossey-Bass.

Strobel, J., & van Barneveld, A. (2009). When is PBL more effective? A Meta-synthesis of meta-analyses comparing PBL to conventional classrooms. Interdisciplinary Journal of Problem-*B*ased Learning, 3(1). http://dx.doi.org/10.7771/1541-5015.1046

Thibault, A. T., Lynch, L. M., & McBride, R. B. (2001). *Proactive police management* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Vernon, T. A. (1995). Attitudes and opinions of faculty tutors about problem-based learning. *Academic Medicine, 70*(3), 216–223.

Vernon, D. T., & Blake R. L. (1993). Does problem-based learning work? A meta-analysis of evaluative research. *Academic Medicine, 68*(7), 550–563.

Vodde, R. F. (2012). Changing paradigms in police training: transitioning from a traditional to an andragogical model. In M. R. Haberfeld, C. A. Clarke, & D. L. Sheehan (Eds.), *Police organization and training* (pp. 27–44). New York, NY: Springer. http://dx.doi.org/10.1007/978-1-4614-0745-4_3

Walker, A. & Leary, H. (2009). A problem based learning meta-analysis: Differences across problem types, implementation types, disciplines, and assessment levels. *Interdisciplinary Journal of Problem-Based Learning, 3*(1), 6–28. http://dx.doi.org/10.7771/1541-5015.1061

Walker, S., & Katz, C.M. (2002). *The police in America: An introduction*. Columbus, OH: McGraw-Hill Companies.

Willis, J. J., Mastrofski, S. D., & Kochel, T. R. (2010). Recommendations for integrating CompStat and community policing. *Policing, 4*(2), 182–193. http://dx.doi.org/10.1093/police/paq005

Woods, D. R. (1994). *Problem-based learning: How to gain the most from PBL*. Waterdown, Ontario: Donald R. Woods.

Wolf, F. M. (1993). Problem-based learning and meta-analysis: can we see the forest through the trees? *Academic Medicine, 68*(7), 542–544.

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