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Pedagogical Design Research for University Police Uniforms

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This paper explores issues and opportunities for new university police officer uniform designs by utilizing a User-Centered Design Methods course as a qualitative pedagogical research approach. As a way of introducing problem-based learning, we brought the uniform redesign project to the junior level class in the School of Design. Since the design brief focused on university police, we viewed this as critical since students are key stakeholders of the uniforms. From the students' interviews with the officers, key themes were identified about the current uniform items (i.e. hats, shirts, vests, pants, hats, and accessories) among other uniform topics. Findings indicated that while the police uniform was inherently professional and recognizable because of the authority of the uniform, there were issues with the uniform, which largely related to fit, fabrics, functionality, and identity. The collaboration between the University of Cincinnati Police Department (UCPD), faculty, and students served as a platform to strategize and plan for next steps towards new police uniform designs and demonstrates a holistic interdisciplinary pedagogical approach for translational design research.

university police uniforms; user-centered design; interdisciplinary design pedagogy; problem-based learning

1 Introduction

User-Centered Design Methods is a required seminar course for fourth year level design students in the School of Design at the University of Cincinnati. This course provides an interdisciplinary pedagogy of the design philosophies and processes that place the user at the centre of design, while learning how to analyse and anticipate user behaviours to identify their needs. Since there are many positive effects with problem-based learning (PBL), the theoretical causal model of PBL (Van Berkel & Schmidt, 2000) was referenced to enhance the pedagogical framework for this course in order to encourage self-motivation and learning experiences. In the fall of 2016, the University of Cincinnati Police Department (UCPD) requested to collaborate with the Design faculty to redesign their police



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uniforms. The integration of real-world interdisciplinary design research projects into the classroom is a cornerstone of PBL since students become active and responsible for their learning (Hmelo-Silver, 2004). This project was therefore introduced in the User-Centered Design Methods course to enrich learning competencies while empowering the students to practice their design research skills by investigating the design issues and opportunities related to the university police uniforms. The purpose of integrating this project into the class was an important part of generating preliminary data for the university police uniform redesign project.

1. Since we live in a complicated society involving increased crime and terrorism, the role of police officers is more significant than ever extending their job beyond protection into a more complex role of serving as a community ambassador of peace and safety as they are enforcing laws. It is obvious that the officers' performance while on duty is embodied through their police uniform since they exercise their authority and power when encountering citizens. Indeed, a uniform is distinctive clothing worn by members of the same organization and its meaning has been influenced by the wearers' occupational abilities and their performances in interacting with people, since clothing is a powerful cue in impression formation (Johnson, 2005). So the uniform, especially police uniforms, identifies the wearer as a part of a collective authoritative organization.
2. All garments have their own functions, ranging from aesthetic to physical. For the functionally oriented garment design, there are several requirements such as physiological, biomechanical, ergonomic, and psychological considerations. A functional garment values aspects such as fit, comfort, and mobility; expressive needs include status, role, and self-esteem; and aesthetic attributes related to design elements in the functional design process are based on the specific needs of the target consumer (Ahsan & Tullio-Pow, 2014). The police uniform, especially the university police uniform, needs to be an efficient tool to express the authority of law enforcement, yet it also needs to convey friendly and approachable qualities, as its "users" or stakeholders include students, faculty, and additional surrounding community members.
3. Considering the importance of the role of university police officers and therefore, how significant the uniform is, there is considerable body of literature acknowledging the power and legitimacy of police uniforms (Balkin & Houlden, 1983; Bell, 1982; Johnson, 2013; Singer & Singer, 1985). Specifically, previous research has focused on how the police officer uniform conveys authority, impressions of colour, interpersonal perceptions, influence and attitude (Bell, 1982; Johnson, 2013; Singer & Singer, 1985). However, less attention has been given to the police uniform, and especially to university police uniforms as a functional garment that requires a systematic approach to analyse and to apply the officers' needs, with consideration to the community's needs/preferences in the design process. The User-Centered Design Methods course is an effective educational vehicle for students and key stakeholders in the university campus community to participate and contribute to the collection of data in the research and discovery phase.
4. Through this paper, we will explore issues and opportunities for new university police uniform designs by utilizing the User-Centered Design Methods course as a qualitative pedagogical design research approach. Activities and outcomes from this class will address both physical and psychological aspects of the uniform to suggest a new uniform design, with the intent of making the university police officer feel more approachable and trustworthy, which can enhance the image of university campus police officers. This pedagogical interdisciplinary design effort is strongly suggested to produce successful design outcomes by integrating real-world research into the classroom. Ultimately it could serve as an effective curricular strategy for new approaches to design; stakeholders within a university system can collaborate to realize solutions that are value-driven (students' learning experience) and outcome-focused (new designs).

2 Background

2.1 *General Social Function and Historical Context of the Police Uniform*

Sociologists have remarked on the special social functions such uniforms perform, solving many of the problems associated with modernizing a workforce in an increasingly urban social milieu (Joseph & Alex, 1972): it designates group membership (both for in-group member and out-group observers) in the service of creating an occupational identity; in the service of group cohesion, it accentuates certain statuses (rank, occupational achievement, etc.) while concealing others (class, and other forms of social status); it serves as a symbol of legitimacy and marks the wearer as harbouring special skills and prerogatives; and it suppresses, or at least sublimates (Bhugra & Silva, 1996; Craik, 2003), individual idiosyncrasy. These processes serve as mechanisms of social placement which provides a framework for mutually negotiated forms of social interaction (Paperman, 2003), including self-formation (Matthews David, 2003; Streicher, 2012; Ugolini, 2010), transgression (Craik, 2005), and resistance (De Camargo, 2016).

It is within that sociological framework, and that historic context, that we should understand the development of the first police uniforms. It is most common to tie the police uniform as we know it today to the “bluecoat bobbies”, Robert Peel’s so-called “New Police” of 1829 (Miller, 1975). He formed the London Metropolitan Police Department, and placed officers in uniforms that were different than the military, but provided an identifiable presence, which were used to deter criminal activity in neighbourhoods where they patrolled. More recent historians have attempted to resist “Whiggish” histories, in which Anglo-American police are viewed as citizen-volunteers, by linking the creation of this force to Peel’s preceding experience in the occupying armies of colonial Ireland (Brogden, 1987), while others have cautioned a direct analogy should not be over emphasized (Styles, 1987).

Either way, a tension lies at the heart of the police uniform (Sinclair, 2011). It was designed to be both reminiscent of the British military uniform—with its epaulettes, brass buttons and other traditional features—but also markedly different; the prevalent blue was chosen as a contrast to the imperial military’s red coats, and thus to connote the distinct mission, prerogatives and limitations of the new Force. The task, negotiated through apparel as well as through administrative organization and armouries, was to forge an administrative branch that embodied the use of violent force, and its constraint, in the service of a newly emergent liberal order.

This latter issue, of the limits and restraint of just violence, served, especially initially, as one of the key markers between military and police forces in the 19th century (Foucault, 2007), and it remains integral to the political, social and symbolic stakes of police uniform design today. The police uniform has become the most readily identifiable aspect of modern policing, with significant changes in design over the last century. There has been a significant amount of research evaluating the degree to which even subtle differences in uniform design convey meanings to different populations, officers themselves included, while also shaping the outcomes of police-citizen encounters (Bushman, 1988; Johnson, 2005; Nickels, 2008; Paul & Birzer, 2004; Singer & Singer, 1985). This insight places the issue of uniform design at the core some of the fundamental issues in policing today: What is the role of police in a diverse, multicultural, liberal society (Chan, 1997)? What are the potential forms of relation between police, as a distinct body, and a general public and how can we organize police labour to move closer to our collective ideals (Karpiak, 2010; Mutsaers, Simpson, and Karpiak, 2015; Karpiak, 2016)?

2.2 *University of Cincinnati Police Department*

Relationships between communities and law enforcement in the United States are in current turmoil, as a number of recent highly controversial police encounters have exposed the rifts between the police and their communities. Controversial officer-involved shootings, in custody-deaths, and aggressive law enforcement practices have yielded a growing distrust amongst communities and police, evident in recent movements such as Black Lives Matter.

The city of Cincinnati in which the University is situated has experienced such a police-community relations crisis after a controversial police shooting in 2015 by a white University police officer of an unarmed African-American motorist in an area off-campus. Law enforcement services for the University are handled by the University of Cincinnati Police Division (UCPD). The UCPD maintains approximately 74 sworn officers and 26 non-sworn security officers; the UCPD sworn officers have full police authority. These officers have primary policing responsibilities on University-owned and operated property, and also patrol in the neighbourhoods surrounding the University. The shooting by a UCPD officer sparked national media coverage and community protests, as this incident occurred during a string of high profile controversial police-involved shootings in the United States (Ellis, Melvin, & Shortell, 2015). Ten days after the shooting incident, the officer was criminally indicted on charges of murder and voluntary manslaughter, yet two separate criminal trials both resulted in hung juries. Ultimately, this incident caused a crisis in public relations between the University and the local community. Immediately following the incident, University officials initiated a comprehensive voluntary police reform process that too, included comprehensive changes in policies, procedures, and training. The purpose of reform is to provide more effective, efficient, and equitable policing, while simultaneously rebuilding trust with university and community members (Public Safety, 2015). One important aspect of this reform effort was to reintroduce the UCPD through a redesign of their police uniforms since a significant amount of research has demonstrated that public trust is key to ensuring stable communities and allowing police to perform their duties to the best of their abilities. During a time when the public continues to challenge police authority and question their legitimacy, changing a uniform is more than just fashion; it can serve to reinforce the image of police officers as helpful public servants who are more approachable and protect the communities they serve.

3 Methodology

3.1 Course Project Brief

The police uniform redesign project was introduced to the User-Centered Design junior level class in the School of Design. The first 4 weeks of the course covered theory, principles and methods of user-centric design, for which then the project (including recruitment, interviewing, feedback and presentations) ran from week 5- week 14 in fall semester in 2016. Since the design brief focused on university campus police, we viewed this as critical since students are key stakeholders (users) of the uniforms. In addition, students are developmentally more mature as fourth year students, so it was feasible for them to assume a more autonomous role in the course, and already had a basic understanding of qualitative design research.

3.2 Strategy for Data Collection

The participants were recruited from the UCPD, which included 27 sworn police officers and 15 security police officers. In recruitment, faculty assured that the participating officers were from varying genders, ranks and levels of experience.

Forty-eight students were enrolled in the course. In advance, it was predetermined that the students' core research activity would be to conduct interviews and observational research during a ride along session with a police officer on duty during a shift. They were also given the option to shadow a safety officer, whose primary duty includes walking around campus or standing in one place, if they were not comfortable riding in the police car with the officer, though the majority of students were excited at the idea of it. Students signed up for one two-hour session during a first, second or third shift over a six-day period. Faculty assigned the students to individually develop a list of questions about policing and the police uniform, focusing on their wearing experiences (including fit, functionality, fabric, colour, identity, etc.) and satisfaction with the current uniforms. Faculty intentionally gave students the freedom to identify what they wanted to learn, in order to further encourage their own curiosity and motivation. Once the ride along activity was completed, students were given 24 hours to annotate and analyse their experience.

Faculty then randomly formed the class into 8 groups of 6 people to discuss their experiences together. In their new groups, they were asked to analyse their data collectively to identify common

themes across their research. In addition to the ride along sessions, students were also asked to conduct secondary research, for which they could also use to further support their group's findings (history of the uniforms, material developments, colour theory, etc.). Next, students re-joined their groups to discuss their experiences and examine their findings (organized as problems, needs, and wants/desires) for overarching themes.

3.3 Analysis: Project feedback and presentations

The groups then shared this information in a presentation to faculty. In doing this, faculty were able to identify gaps in their research and provide guidelines for further inquiry based on their self-prescribed focus area and findings. The faculty's role was especially important at this time, since the PBL facilitator must continually monitor the discussion, selecting and implementing appropriate strategies as needed (Hmelo-Silver & Barrows, 2006). Faculty helped students clarify any confusing information and missed insights, and also provided guidance on next steps for their research process. From this, they clarified their opportunity areas, for which they were asked to address emotional, physical/functional (what they need to perform their job) and aesthetic opportunities (as it related to their image).

The final deliverable was a research presentation with primary and secondary insights and opportunities to faculty, the UPD officers and administrative leadership. This interaction also allowed for the officers to validate and elaborate on the students' findings. By allowing the students to identify their own focus area, each group presentation had a unique angle to the project which yielded a broader range of insights as a result. In addition, commonalities across all of their findings were determined for aspects of the uniform including tops, bottoms, accessories, design details (pockets and fabric), and identity (as demonstrated in the Tables 1-3 below).

4 Results/ Findings

As a result of the students' interviews with the officers during the ride along sessions, the findings were organized into key themes for the current uniform clothing items and topics involving the uniform (i.e. identity). The results highlighted the issues and needs of police officers with regard to the uniform in order to enhance their performance.

4.1 The current police uniform (Shirt, Vest, and Pants)

1. Table 1 describes the officers' experiences with the current police uniform shirt, vest and pants. The current uniform shirt is a non-stretch, woven polyester blend with a centre front placket with buttons down the front, and consisting of two breast pockets and shoulder epaulettes. The officers consider the current uniform shirt to be "professional and familiar to the community". However, multiple issues resulted with the fabric/fit of the shirt. The officers' indicated that the fabric was slippery causing the shirt to "rise out of the pants because of how heavy the belt is weighing the pants down, which is very distracting". A part of this issue seemed to be due to the length of the shirt in comparison to body width and thereby interfering with the tactical vest. Other comments referred to the quality of the fabric, suggesting that the fabric "frays when it is rubbed by items on the belt" and that "pills badly". Since the fabric of the shirt was without stretch, it was considered to be "uncomfortable" and "not easy to move around in". The shirt was one of a few layers of that officers wear, including the undershirt, the bulletproof vest, in addition to 1-2 inner jackets and outer coats. Since these fabrics were not breathable, the officers became hot and can sweat excessively.
2. Regarding the vests, the results of the interview largely focus on aesthetics and its symbolic meaning. The police officers acknowledged that the vest was a "status symbol and is good for personal safety", yet also acknowledged that it was a symbol that can communicate "overexertion of power". Since it is something that the Special Weapons And Tactics (S.W.A.T) team wears, it was both familiar and identifiable. However, one officer

commented that it looks “incredibly militaristic and unapproachable like riot gear, which can intimidate citizens”.

- The results for the pants of the current uniform suggest there were issues with the functionality and quality of the fabric. The current uniform pants had a tactical style with a fly-front zip and side cargo pockets. One officer stated, “the crotch depth was too long and hinders movement”. For female officers the pant style was “especially problematic when going to the bathroom”, because they had to remove their duty belt. An additional comment referred to the colour of the pants. The officer explained, “the black pants fade with each wash creating inconsistency”.

Table 1 Pros and Cons of the current police uniform (shirt, vest, and pant).

Shirt	
Pros	Professional and Familiarity - Looks professional and is familiar to the community
Cons	Quality of Fit / Fabric - Fabric is too slippery and it doesn't stay tucked in; buttons also tend to fall off - Shirt rises out of pants because of how heavy the belt is weighing the pants down. It is very distracting - Fabric used for the shirts is not easy to move around in - Uniform layers are too hot and not breathable - The light blue imitation material pills badly - Length of shirt is too short with the torso being wide and interfering with the tactical vest
Vests	
Pros	Symbolism - Symbol of status and safety and can also be an overexertion of power
Cons	Familiarity / Identifiable - Familiar and identifiable
	Militaristic / Unapproachable - Incredibly militaristic and unapproachable like riot gear
Pants	
Pros	N/a
Cons	Quality of Fit / Fabric - Crotch depth is too long and hinders movement - The black pants fade with each wash creating inconsistency - Light blue colour of our uniforms also gets dirty easily
	Functionality - Going to the bathroom is a problem for female sworn officers

4.2 The current police uniform accessories and design details (Hat, Belt, Pockets, Fabric)

Table 2 describes the officers' experiences with the current uniform accessories (hat, belt) and design details (pockets, fabric). The current hat worn by police officers was a hard shell “campaign hat”, broad-brimmed felt straw hat, with a high crown, pinched symmetrically at the four corners. The officers associated the hat with professionalism, as reflected by one statement that indicated, “the campaign hat has a professional, symbolic look for the police force and is meant to build trust”. In addition to the hat being symbolic, it was also “easily identifiable”. This was important especially during public events. One officer commented, “the significance of the hat was only necessary at events such as football games when we need to be easily spotted”. Another officer described, “the campaign hat makes civilians feel safe that they're easily discernable”. In addition to serving as a

visual cue, another statement described that the campaign hat is “usually seen worn by state troopers”. While it is a recognizable part of the uniform, statements suggest that it inhibited approachability. An officer commented, “this hat gives the civilians the feeling that he or she should not approach the officer, as well as being too intimidating”. Additional statements focus on the wearing experience of the hat. One officer explained, “the hats are uncomfortable and hinder movement”. Another comment was, “the campaign hats eliminate my view and gives me a headache”. Furthermore, “when it rains, the water pours off the hat and down the coat and into the boots”. Additionally, an officer said, “it is an unnecessary distraction”.

The current belt that the police officers wear can be described as a belt that was “typically constructed of nylon or leather used by police and security officers to carry equipment easily, in a readily-accessible manner, while leaving the hands free to interact”. Although the belt was an important part of the uniform, there were no positive comments associated with it. Mainly, the officers’ remarks reflected how cumbersome the belt was especially in restriction movement and also in its heaviness and stiffness. One officer commented, “the leather is stiff, it doesn’t bend or move easily and it can break down when bent, and the equipment on the belt is very heavy”. Another stated, “the belt restricts movement at the waist and causes lower back and hip pain”. Furthermore, it “does not allow us to sit properly in the car or chair”. One officer also suggested “the belt does not look professional and wears easily”.

Regarding the design details of the current uniform, two main design details discussed by the officers focused on the uniform shirt pockets and the fabrics. There are two breast pockets on the front of the shirt, which were considered to be non-functional. One officer explained that “the pockets on the shirt do not hold much” and is “awkward”. Specifically, one officer explained that there is no place on the shirt to hold a pen, even though there is a patch stitched on the upper shirt pocket”. Another suggested that the aesthetic of the pockets “is very outdated”. The fabric garnered many comments, all relating to quality, performance and comfort. One officer explained, “the material was itchy, not stain resistant and generally uncomfortable”. Another stated that the collars are “very stiff and itchy”. One officer simply remarked, “the material is horrible”. An officer commented on the breathability of the fabric, explaining that it caused “excessive sweating in the winter months”.

Table 2 Pros and Cons of the current police uniform accessories and design details (hat, belt, pockets, fabric).

Hat	
Pros	<p>Function / Symbolism</p> <ul style="list-style-type: none"> - Only necessary at events such as football games when we need to be easily spotted which makes civilians feel safe - Professional and symbolic to build trust
Cons	<p>Approachability / Intimidating</p> <ul style="list-style-type: none"> - The sworn officer's hat is usually seen worn by state troopers. This hat gives the civilian the feeling that he or she should not approach the officer, as well as being too intimidating.
	<p>Functionality / Purpose</p> <ul style="list-style-type: none"> - When it rains, the water pours off of the hat and down the coat into the boots - An unnecessary distraction - Uncomfortable and hinder movement - Eliminates my view and give me a headache
Belt	
Pros	N/a
Cons	<p>Functionality</p> <ul style="list-style-type: none"> - The leather is stiff, it doesn't bend or move easily and it can break down when bent. - Very heavy and hard to clean. When it gets dirty, they have to throw it away and buy a new one.
	<p>Professionalism</p> <ul style="list-style-type: none"> - Does not look professional
	<p>Movement Restriction</p> <ul style="list-style-type: none"> - Restricts movement at waist and causes lower back and hip pain. It does not allow them to sit properly in the car or chair.
Pockets	
Pros	N/a
Cons	<p>Out-of-date Pockets / Importance</p> <ul style="list-style-type: none"> - The pocket look is very out-dated, but they are important.
	<p>Functionality</p> <ul style="list-style-type: none"> - The breast pocket is awkward and non-functional.
	<p>Storage</p> <ul style="list-style-type: none"> - The pockets on the shirt do not hold much. - No place on the shirt to hold a pen- a patch is stitched on top of the upper shirt pocket.
Fabric	
Pros	N/a
Cons	<p>Quality</p> <ul style="list-style-type: none"> - The material is itchy, not stain resistant, and generally uncomfortable. The collars are very stiff and itchy. The fabric is cheap/thin and rubs together. - There is lots of pilling, excessive sweating in warmer months. The fabrics itch and run on the body causing officers to be uncomfortable. - The material is horrible.

4.3 The identity of the current police uniform

Table 3 describes the officers' statements on the overall identity of their current police uniform. Many remarked about the current uniform colours with regard to recognition. Several officers noted that the uniform did not reflect the brand of the University. Two officers stated, "the current uniform has no connection to the University" and "the uniforms lack a distinct connection to the University". Comparably, one officer mentioned, "the uniform is not distinguishable from the City police". Interestingly, another officer described that the "current uniform colours for UPD are almost exactly like the State police with only minor detail differences". Other issues were noted that the uniform caused the public to view them in a negative way. One officer stated, "the overall uniform has a negative and intimidating view from the public". Furthermore, one explained, "it feels as if we're unable to properly serve the community due to appearing unapproachable". In addition, an officer remarked that the officers "feel like they are not receiving the recognition they desire".

Table 3 The identity of the current police uniform.

Identity	
Pros	N/a
Cons	<p>Uniform colours / Recognition</p> <ul style="list-style-type: none"> - The current uniform colours for UPD are almost exactly the same as the State police with only minor detail differences. - The UPD officers feel like they are not receiving the recognition they desire. When the State police are on campus for many events, the officers all merge together in colour.
	<p>Branding</p> <ul style="list-style-type: none"> - Lack a distinct connection to the University - Distinction from the City Police and more compatibility with the university is needed - The current uniform has no connection to the University
	<p>Negative associations / Intimidating</p> <ul style="list-style-type: none"> - The overall uniform has a negative and intimidating view from the public, especially with the recent trial. - It feels as if we're unable to properly serve the community due to appearing unapproachable.

5 Discussion/ Implications

5.1 Recommendations from Students' Interviews with Police Officers

Findings from the students' research indicated that although the police uniform was inherently professional and recognizable, there were issues with the uniform, which largely related to fit and functionality. Overall, the uniform shirt and the fabric were two aspects of the uniform that the officers wanted to be improved. Regarding the police uniform shirt, officers acknowledged that it is iconic and communicates professionalism, supporting the previous research (Bell, 1982; Bushman, 1988; Spindler, 2001) that the uniform has the authority and legitimacy when the officers are enforcing the law. However, the fit and fabric of the shirt were not satisfactory. The shirt was constantly coming untucked, due to the "fabric being slippery and due to the weight of the belt". To prevent this, one officer recommended adding snaps or buttons to connect the hem of the shirt to the top of the pant. Additionally, the fabric was not durable or comfortable, and did not allow for breathability. It was suggested performance alternatives such as "polo-style shirts that could function to keep the officers drier and cooler with moisture-wicking lightweight and breathable fabrics". Another officer mentioned about "durable, stretch (knit) fabrics similar to those used in performance wear to make it easier to move around in". Interestingly, suggestions focused on the importance of the colour of their under shirts. One officer described, "Officers feel safer avoiding a white/obvious undershirt since it indicates a weak point for attackers...criminals with the intention of shooting or stabbing an officer will aim for the white undershirt because they know it is the layer closest to the skin not protecting them". Furthermore, another officer described, "if special shirts were designed and provided for the officers they would need to be black, or matching the outer

colour of the uniform". Colour was also important to hide dirt and marks. An officer mentioned "switch to a darker grey or even red colour that does not show sweat or food stains".

Overall the officers acknowledged the value of wearing a vest, because it was a symbol of power and safety and was obviously good for their personal safety. Concurrently, the officers recognized that the vest was associated with negative connotations, like the overexertion of power and intimidation. If a vest could be a part of their university uniform, they recommended that it be "distinguishable from the S.W.A.T vest" and elaborated for it to be "more proper". The officers liked for the vest to offer "better weight distribution between the belt, pockets and vest", as well as "increased comfort and accessibility, with easier access to their radio". The results for the pants of the current uniform suggest there were opportunities to improve the functionality, especially for female officers who must remove their belt each time they use the restroom.

Regarding design details, the quality of the fabric was an area for improvement overall with the uniform top and bottoms. Additionally, the officers emphasized the importance of the pockets, yet their comments described them as "out-dated, awkward and non-functional", suggesting improvements with the aesthetics, placement and function.

The officers identified the current campaign hat to be necessary because it "allows for them to be easily recognized in a large crowd". They also associated the hat to be "a symbol of professionalism and trust". However, it was also viewed as intimidating to civilians and made them seem less approachable. Furthermore, it was not comfortable and hindered movement and visibility. An alternative suggestion that was requested by multiple officers was a baseball cap, since "it looks less intimidating". Since the officers would like for the uniform to connect better with the University branding, a baseball cap could further differentiate themselves from the city police while communicating an athletic appeal.

The duty belt was viewed as synonymous with the police uniform, yet was also one of the most restrictive items of the uniform. Although it was critical to the officer's role, it restricted their movement and inhibited their performance. It was heavy and stiff because it is made of leather, and the equipment on the belt caused it to weigh even more, resulting in some cases, increased lower back and hip pain. Suggestions were to use a light-weight material or re-imagine the functionality of the duty belt altogether.

There were several comments about the identity of the uniforms with regard to recognition yet distinction. The officers understood the importance of being identifiable by citizens in the community; however, their statements reflected their desire for a stronger visual connection to the University. By improving the uniform to reflect the branding of the University, the officers would be further differentiated from city and state police. In addition, "they acknowledged that improvements could also make the officers look approachable and less intimidating".

5.2 Students' Learning Experiences based on Problem-based Learning (PBL)

This course yielded several positive effects based on Problem-based Learning, which included self-directed learning and taking responsibility for their own learning, along with facilitated collaborative knowledge (Hmelo-Silver & Barrows, 2006). The ride along sessions with the officers proved to be a significant experience for the students; though some students were apprehensive prior, they were energized and motivated after their experiences. It was at that moment that students' developed greater empathy and compassion towards the police officers. Since they were able to spend this time with the officers during a shift, they cultivated a great appreciation of their responsibilities, for which they were surprised at how much of their job focused on assisting community members.

Another important aspect regarding class activities was balancing individual and group work in order to promote self-directed learning and collaboration. Students conducted their ride along sessions individually so that students had greater autonomy in developing their questionnaires, since intrinsic

motivation occurs when learners work on a task motivated by their own interests, challenges or sense of satisfaction (Hmelo-Silver, 2004).

Upon completion of their ride along sessions, students were placed into groups, which allowed them to discuss their experiences and practice synthesizing their findings. It was critical to involve the University police officers in the beginning of when the project was introduced, in order to acclimate the students to the officers and the project brief. It was effective for the officers to listen to the presentations towards the end, since at that time many of the findings were discussed and validated and/or expanded upon further. Both of these interactions reinforced the reality of the project, and reminded students that they were designing for users with specific needs. Overall, the students felt they were empowered while practicing their design research skills by investigating the design issues and opportunities related to the university police uniforms.

6 Conclusions

The collaboration between the University of Cincinnati Police Department, faculty, and students demonstrates a holistic interdisciplinary pedagogical approach for translational design research. The uniform is an important aspect of the reform process to provide more effective, efficient, and equitable policing, since it is integral to the image of the police department to the University community. The project was embedded in the User-Centered Design Methods course so that students could investigate and understand the challenges that the University police officers face with their uniforms, and therefore empowered them to do so in a self-directed manner, both individually and collaboratively, in order to encourage curiosity and foster critical thinking (Hmelo-Silver, 2004).

Integrating this design project into the class had a significant role in generating preliminary research data for the project. As students are key stakeholders in the community, when given the task of finding the problems, meaningful insights were generated for the uniform including the shirts, vests, and pants, in addition to accessories and design details. They spoke about problems and frustrations from the officers' point-of-view by highlighting officers' experiences with the uniform. They also communicated their findings in terms of importance to the officers, demonstrating empathic and user-centric orientation. Moreover, students articulated the causes and effects of problems, which illustrated critical thinking by examining "the why" behind many of these issues. Students were asked to consider opportunities from both functional (physical and emotional) as well as aesthetic perspectives, for which they distinguished "needs" versus "wants" with the uniforms. Their findings culminated into a presentation with a call to action or outline of design opportunities to be addressed, directed by and from a problem statement.

Officers were actively involved in the class activities (such as critiques and presentations), therefore students were consistently engaged with their clients. The UCPD administration was also proactively involved throughout the entire process, which prevented the project from merely being a classroom exercise; instead, it served as a practical platform to strategize and plan for next steps towards new police uniform designs. After the course was completed, all research findings were compiled and synthesized. In the Spring semester 2017, the UCPD, College of DAAP faculty and students, with support from a uniform manufacturing company, suggested several uniform concepts. From this preliminary research and design development, the aim is to leverage these insights to create a new identity, that of which represents the University branding, as well as the new policing principles of transparency, legitimacy, accountability, fairness, collaboration, and innovation.

7 References

- Ahsan, N., & Tullio-Pow, S. (2014). Functional clothing for natural disaster survivors. *Disaster Prevention and Management, 24*(3), 306-319.
- Balkin, S., & Houlden, P. (1983). Reducing fear of crime through occupational presence. *Criminal Justice and Behavior, 10*(1), 13-33.

- Bell, D. J. (1982). Police uniforms, attitudes, and citizens. *Journal of Criminal Justice*, 10(1), 45-55. doi:10.1016/0047-2352(82)90059-9.
- Bhugra, D., & Silva, P. D. (1996). Uniforms—fact, Fashion, Fantasy and Fetish. *Sexual and Marital Therapy* 11(4), 393–406. doi:10.1080/02674659608404453.
- Brogden, M. (1987). The emergence of the police—The colonial dimension. *The British Journal of Criminology*, 27(1), 4-14. doi:10.2307/23637268.
- Bushman, B. J. (1988). The effects of apparel on compliance. *Personality and Social Psychology Bulletin*, 14(3). 459–467. doi:10.1177/0146167288143004.
- Chan, J. (1997). *Changing Police Culture- Policing in a Multicultural Society*. Cambridge: Cambridge University Press
- Craik, J. (2003). The cultural politics of the uniform. *Fashion Theory*, 7(2), 127–147. doi:10.2752/136270403778052140.
- Craik, J. (2005). *Uniforms Exposed: From Conformity to Transgression*. New York: Berg.
- De Camargo, C. R. (2016). *A uniform not uniform: an ethnography of police clothing, performance, gender and subculture in neighbourhood policing (Doctoral Dissertation)*. Retrieved from <http://usir.salford.ac.uk/41116/1/PHD%20January%202017%20Final.pdf>
- Ellis, R., Melvin, D., & Shortell, D. (2015, Aug 16 2016). Investigation finished in police shooting in Cincinnati traffic stop. *CNN Story Highlights*. Retrieved from <http://www.cnn.com/2015/07/21/us/cincinnati-police-shooting/index.html>.
- Foucault, M. (2007). *Security, Territory, Population: Lectures at the College de France 1977--1978 (1st ed.)*. New York: Picador.
- Hmelo-Silver, C. E. (2004). Problem-Based learning: What and how do students learn? *Educational Psychology Review*, 16(3), 235-266.
- Hmelo-Silver, C. E., & Barrows, H.S. (2006). Goals and Strategies of a Problem-based Learning Facilitator. *Interdisciplinary Journal of Problem-Based Learning*, 1(1), 21-39. doi:10.7771/1541-5015.1004
- Johnson, R. R. (2005). Police uniform color and citizen impression formation. *Journal of Police and Criminal Psychology* 20(2), 58–66. doi:10.1007/BF02852653.
- Johnson, R. R. (2013). An examination of police department uniform color and police- Citizen aggression. *Criminal Justice and Behavior*, 40(2), 228-244.
- Joseph, N., & Alex, N. (1972). The uniform: A sociological perspective. *American Journal of Sociology*, 77(4). 719–730. doi:10.1086/225197.
- Karpiak, Kevin G. (2010). "Of Heroes and Polemics: 'The Policeman' in Urban Ethnography." *PoLAR: Political and Legal Anthropology Review* 33 (s1). Blackwell Publishing Inc: 7–31. doi:10.1111/j.1555-2934.2010.01063.x.Page.
- Karpiak, Kevin G. (2016). "Terreur, Terroir, Terrasse: Vectors of Police and Public in France after Charlie Hebdo and Le Bataclan." *Anthropology Now* 8 (2): 1–12. doi:10.1080/19428200.2016.1202610.
- Matthews David, A. (2003). Decorated men: Fashioning the french soldier 1852–1914. *Fashion Theory*, 7(1), 3–37. doi:10.2752/136270403778052168.
- Miller, W. R. (1975). Police authority in London and New York city 1830-1870. *Journal of Social History*, 8(2), 81–101. doi:10.2307/3786268.
- Mutsaers, Paul, Jennie Simpson, and Kevin G. Karpiak. 2015. "The Anthropology of Police as Public Anthropology." *American Anthropologist*. doi:10.1111/aman.12372.
- Nickels, E. (2008). Good guys wear black: uniform color and citizen impressions of police. *Policing: An International Journal of Police Strategies & Management*, 31(1), 77–92. doi:10.1108/13639510810852585.
- Paperman, P. (2003). Surveillance underground: The uniform as an interaction device. *Ethnography*, 4(3), 397–419. doi:10.1177/146613810343005.
- Paul, J., & Birzer, M. L. (2004). Images of power: An analysis of the militarization of police uniforms and messages of service. *Free Inquiry in Creative Sociology*, 32(2), 121-128.
- Public Safety (2015, Aug 20, 2016). Safety and reform. Retrieved from <http://www.uc.edu/publicsafety/reform.html>
- Sinclair, G. (2011). *Globalising British Policing*. London: Ashgate.
- Singer, M. S., & Singer, A. E. (1985). The Effect of police uniform on interpersonal perception. *The Journal of Psychology*, 119(2), 157–161. doi:10.1080/00223980.1985.10542882.
- Spindler, A. (2001). *The Power of the Uniform*. Milano: Charta.
- Streicher, R. (2012). Fashioning the gentlemanly state. *International Feminist Journal of Politics*, 14(4), 470–488. doi:10.1080/14616742.2012.726093.

- Styles, J. (1987). The emergence of the police—Explaining police reform in eighteenth and nineteenth century England. *The British Journal of Criminology*, 27(1), 27-53. doi:10.2307/23637269.
- Ugolini, L. (2010). Consumers to combatants? British uniforms and identities, 1914–18. *Fashion Theory*, 14(2), 159–182. doi:10.2752/175174110X12665093381540.
- Van Berkel, H.J., & Schmidt, H.G. (2000). Motivation to commit oneself as a determinant of achievement in problem-based learning. *Higher Education*, 40(2), 231-242. doi: 10.1023/A:1004022116365.

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