Setting the Stage: Preparation for Advanced Combat Profiling Training

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ABSTRACT

Training advanced combat profiling skills presents a wide range of challenges in any setting, especially a computer-based training environment. Specifically, these challenges surround training higher-order perceptual–cognitive skills, such as interpreting subtle and often ambiguous cues in dynamic contexts without the experiential framework of a real-world setting. The US Marine Corps' Combat Hunter curriculum was designed specifically to train these skills through advanced combat profiling and tracking methods, along with the supporting perceptual–cognitive knowledge. The core curriculum has been implemented into conventional face-to-face instruction across the US Marine Corps. In an effort to support this training, a computer-based pre-training system was commissioned. Despite the widespread advantages of computer-based training, the lack of real-time instructor facilitation presents a variety of challenges. This paper discusses some of these challenges focusing primarily on one of the key components of Combat Hunter, combat *profiling*. Also, it addresses issues such as how to present a variety of cues within a given context, how to offer relevant feedback on the analysis of unclear indicators in a given environment, and how to familiarize trainees with the importance of cultural context. This paper further discusses strategies, that when implemented, take learners through a progression of cue detection and interpretation activities. Ultimately, this computer-based training system is intended to enable preparation for training in advanced combat profiling by focusing on the *interpretation* of cues within a given context and supporting key prerequisite declarative knowledge. Trainees will have the core skills to excel in the practical application and hands-on instruction of the corresponding face-to-face Combat Hunter course.

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INTRODUCTION

Since July of 2007, the United States Marine Corps (USMC) Combat Hunter course has trained military personnel to be more aware and vigilant for combat operations involving irregular and often ambiguous threats. During this course, personnel learn how to interpret human behaviors, identify environmental indicators, and read the "feel" of their surroundings (Freeman, Walker, Gerer, et al., 2011). The core curriculum of this course has been implemented throughout the Marine Corps in a selection of 5-day and 10-day courses, and has further undergone several formative evaluations (see Spiker & Johnston, 2010a, 2010b; Kobus, Palmer, Kobus, & Ostertag, 2009). Despite overall positive reactions to the course, a few drawbacks were realized regarding its mode of delivery.

One primary concern is that the current mode of delivery limits accessibility of the course to personnel. This type of training requires capable role players, experienced instructors, and thorough practice, and with that, increases in "time, manpower, and money" (Spain, Priest & Murphy, 2012, p. 87). This is most apparent with the special, one-time 20-day Combat Hunter-like course, Border Hunter, which set out to provide a "graduate-level" version of the Combat Hunter course. Border Hunter set the gold standard for this type of training by utilizing expert tracking and profiling instructors, extended rehearsal time on key knowledge, skills and abilities (KSAs), and more immersive role playing activities.

With the small number of practiced instructors qualified to teach at that level, wide-spread access and efficient throughput are heavily restricted (Schatz, Reitz, Nicholson & Fautua, 2010). Because this type of training has been identified as both valuable and effective (Spiker & Johnston, 2010a, 2012b), supportive means were sought to address this overarching concern. As such, it was recommended that a supplemental computer-based pre-trainer system serve as the means to reduce cost, enable widespread accessibility, and enhance delivery of core materials (Schatz, Taylor, Nicholson, et al., 2011).

With unique training comes a wide range of challenges, especially in computer-based training environments. Specifically, these challenges surround training higher-order perceptual–cognitive skills, such as interpreting subtle and often ambiguous cues in dynamic contexts without the experiential framework of a real-world setting. This paper discusses challenges focusing primarily on one of the key components of Combat Hunter, combat *profiling,* and the challenges of supporting this type of training in a computer-based environment.

What is Combat Profiling?

Combat profiling involves the identification and understanding of a cluster of cues that fall into one of the following Domains of Profiling: *Biometrics* (physiological reactions), *Kinesics* (body movement and facial expressions), *Proxemics* (spatial relationships), *Geographics* (physical surroundings), *Atmospherics* (environmental mood), and *Heuristics* (tactical shortcuts). Broadly, combat profiling entails establishing baselines of expected behaviors and physiological responses, identifying and interpreting anomalous sights or behaviors, and making critical decisions left-of-bang, based on this information.

Establishing a Baseline
One of the foundational tenets of the Combat Hunter curriculum is for the Marine to establish a "baseline," or a normative pattern of social and cultural behaviors within a specific area of operations. The Marine should always compare what he or she perceives in the field to what the expected baseline is, as well as actively seek anomalies within that identified baseline. Societal customs, behaviors, and values are intricately linked to the cultures of the local populations. While there are certain uncontrollable, biometric responses that are incorporated into the baseline, such as sweating or pupil dilation, most aspects of the baseline stem from both social and environmental human interactions. The combat profiling domains, in particular those that are based on human social interactive behaviors such as facial expressions, body language and social distances,

are based largely on the customs and cultures of the local people.

Such a vast array of cultural values and practices exist throughout the world as to make including all of them within one course of study impractical. Instead, Marines must understand that culture has a significant influence on these human behaviors, and that learning the cultures and customs of the local population is imperative to the interpretation of social cues and body language necessary for establishing an appropriate baseline. Ultimately the baseline for any given area is a combination of behaviors and responses comprising what would be "normal," or expected, among the local population.

Interpreting Profiling Cues
Marines are instructed to vigilantly scan the area of operation in order to proactively seek anything out of the ordinary, as well as to ascertain the overall "mood," or general atmosphere, of the environment. This is done via the recognition and interpretation of cues within six domains of profiling. In general, these cues are either social cues, being displayed in the context of human behaviors or interactions, or environmental cues found within the physical terrain. For example, a person averting eye contact and orienting his or her body away from you and toward the exit may indicate that the subject is not being fully cooperative and wishes to evade the conversation.

Marines must be attuned to the nonverbal communication being displayed by the people they are interacting with. These cues can indicate that someone is nervous and lying or, on the other hand, receptive to Marines' presence and telling the truth. These cues can be used to identify an impending attack. For example, if a usually crowded area suddenly becomes vacant as a Marine approaches, an enemy attack may follow.

Decision-making "Left-of-Bang"
Ultimately the goal of establishing a baseline, identifying profiling cues, and detecting anomalies is to facilitate better proactive decision-making. This is referred to as acting "left-of-bang," or before an incident takes place.

Often, insurgent attacks, such as sniper or IED attacks, take place with little or no apparent warning. This requires Marines to be more intuitive and anticipate danger by interpreting subtle cues on a constant basis. Not only does this allow Marines to recognize imminent threats, but also to recognize that enemy activity has begun or increased in a given area well before an attack has been planned or staged.
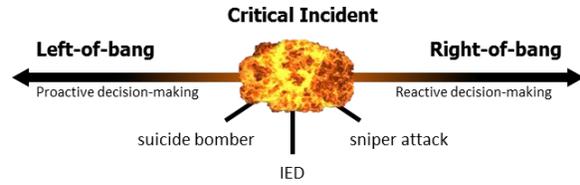

Figure 1. Incident timeline showing decision-making as it relates to enemy activity

Learning the cultural and social practices of the local population, interpreting profiling cues, and using the gathered information to act left-of-bang facilitate mission accomplishment. In addition, these serve as force multipliers, saving the lives of Marines in the field. Ultimately, this process allows Marines to recognize and articulate when something seems "off," or when someone seems to be uncooperative regardless of the verbal responses that they provide.

Instructional Challenges

Training advanced combat profiling skills in a computer-based environment presents a variety of challenges.

Challenge 1:
 Demonstrate that a cue by itself often provides limited intelligence about potential actions, and that with every added cue a more detailed picture emerges.

Challenge 2:
 Illustrate profiling cues in isolation without the experiential framework of a real-world setting, while showing that only combined cues have meaning within a certain context and baseline.

Challenge 3:
 Provide all declarative knowledge associated with each of the profiling domains, while maintaining a high-level of visual involvement and minimal usage of text.

Challenge 4:
 Familiarize trainees with the importance of cultural context without descending into training regional-specific behaviors.

Challenge 5:
 Illustrate the impact specific cue combinations may have on decision-making when guidelines are subjective with no concrete *rights* or *wrongs*.

The following section will discuss how this course addresses these challenges, specifically through a comprehensive support strategy that includes a variety of instructional strategies and media tactics.

COMPUTER-BASED SUPPORT STRATEGY

With much of our target audience having grown up with games, interactive media, or engaging computer graphics, the more archaic type of computer-based training with the black text, never-ending white background, and the occasional picture is insufficient, and simply not commensurate with the degree of technology/media available. As such, we sought to simplify the core Combat Hunter material, reduce text, and increase interactivity as much as possible.

Originally, the primary focus of our computer-based training was to address terminology and declarative concepts. This would provide the face-to-face course instructors with more time on examples, activities, and rich, interactive discussions. Ultimately, we decided to expand on that focus and build a training system that could stand on its own, and still support the efforts of the 5-day and 10-day training initiatives. The following sections will discuss our overall instructional approach in addressing the combat profiling material and some of the media tactics we utilized to enhance engagement and interactivity.

Instructional Strategies and Tactics

We applied strategies and tactics that would advance trainees through visually rich profiling vignettes, up to higher-level activities that would illustrate the relationship between profiling cues, common baselines, and culture. This progression was structured around three basic principles of constructivism outlined by Bruner (1966): *readiness*, *spiral organization,* and *generation*. *Readiness* refers to the learner's ability and willingness to engage in the material. To achieve this, instruction must relate to the experiences and context of the target learner audience. *Spiral organization* refers to the structure and sequence of instruction, where the instruction is easy to grasp and continually builds upon previously learned information. *Generation* refers the learner's ability to make inferences about the material by going "beyond the information given" (Bruner, 1973, p. 49). The instruction should ultimately facilitate this through a variety of activities that challenge learners to "apply and generalize their understanding, refining them along the way" (p. 50).

Through this framework we cultivated a learning environment where trainees could be active in their learning, making sense out of the material through the scope of their own experiences, naturally constructing knowledge about the cue interaction, and applying their understanding in situations that require critical decisions. To start, we laid the groundwork for combat profiling by first discussing the impact of culture on generating baselines, utilizing American culture as a foundation.

Cultural Baselines

Marines must recognize that culture has a considerable influence on a variety of human behaviors, and that it is necessary for establishing appropriate baselines. In order to facilitate this understanding, we created a brief overview of the importance of culture and its value in military operations for inclusion in the course. We designed this material to familiarize trainees with the ways in which different cultural values influence societies, to encourage them to shed preconceived notions about foreign peoples and cultures, and to provide them with concrete examples of the impact cultural differences have had on historical military operations. In the end, we articulated the preeminent importance that relationships with local populations play in recent and ongoing military operations.

While the Combat Profiling curriculum effectively teaches Marines how to interpret behavioral and social cues, it must do so by providing Marines with a relatively standard set of cultural expectations, typically based on experiences in Iraq and Afghanistan. While this is effective and relevant, Marines must understand that behavioral patterns are much different in other areas of the world, such as East Africa, South America, or Eastern Europe, and that personal experiences may misrepresent aspects of a variety of cultures. To address this, we put forth strategies that would challenge Marines' pre-existing cultural beliefs and open them up to different cultural perspectives.

These strategies involve the design of specific events that make the trainees' existing conceptions more explicit, and then challenging those conceptions to engender a state of conflict or disequilibrium (Duit & Treagust, 2003). As such, our activities were designed to facilitate a degree of *conceptual change,* or the change required when incoming information conflicts with the prior knowledge and experiences of the learner (Vosniadou & Lieven, 2004). Figure 2 contains sample photos from one of these activities, where we show trainees *misleading* representations of a different cultural area, in this case Iran. To facilitate the necessary conceptual change, we utilized guidelines from Nussbaum and Novick (1982) to help sequence our activities.

First, we *expose* trainee preconceptions by advancing them through a sequence of these and other visual images, momentarily withholding the bottom right photo in Figure 2. The images are used to reveal preconceptions the trainee may have about different locations of the world and how they look. Note that the trainees are not told where these images are from. Open-ended questions about the locations represented in these photos are then asked to bring their preconceptions to the surface.

Figure 2. Images from a cultural baseline activity

Next, we introduce *discrepant* information about these representations that would likely conflict with trainee preconceptions. We achieved this by revealing the bottom right image, a representation trainees may view as typically 'Middle Eastern', and explain that all these pictures are of Iran. Finally, we encourage trainees to *restructure* possible misconceptions about Iran, and more importantly, different cultures in general.

The Combat Hunter curriculum also emphasizes the need for Marines to understand the culture and motivations of their enemies. After showing trainees that different areas and cultures may not always fit to existing conceptions, we thought it important to familiarize trainees with the ways in which different cultural values and ideologies influence societal norms and baselines—specifically, how these ideologies can feed extremism. This is accomplished by first teaching the Marine what ideology is as defined by the curriculum—ideology comprises, cultural, political, and religious factors. Next, trainees associate the concept of ideology with extremist groups, and finally we provide examples of how ideologies have influenced terrorist activities.

To support this, we applied a strategy that would compare and contrast a variety of cultural ideologies to an American one, which most of the trainees could draw experiences from. This approach aligned with the assumptions of *schema theory* where retention of to-be-learned information would increase when linked to information the learners already knew (Bruning, Schraw, Norby, & Ronning, 2004). As depicted in Figure 3, Marines are first provided with the cultural, political, and religious aspects of what can be considered an American ideology.

Figure 3. Screenshot of *American Ideology* portion of the culture activity

This allows the Marines to relate the material to concepts that they are familiar with. Marines are then presented with examples of specific terrorist organizations and how their ideological components, be they religious, cultural, or political, create motivations for violence and terrorism.

Ultimately, completing the introductory cultural material before learning Combat Profiling techniques allows the Marine to understand the dynamic nature of cultural values, and how they influence human behavior. In addition, Marines recognize the importance of learning local social structures and customs in order to establish an accurate context in which to interpret human behaviors. In the end, Marines will learn that understanding cultures and customs of the local population are imperative for establishing appropriate baselines.

Interpreting Profiling Cues
Specific cues, such as profuse sweating, lack of eye contact, graffiti on the walls, or a suddenly empty marketplace, may not have any inherent value taken individually. In order to understand the relevance of these observations, cues must be considered together within the proper context of an area. The Marine must know the baseline, recognize profiling cues, and compare those cues to that established baseline. This process allows Marines to operate more dynamically within an area of operation, as compared to moving

through a given area strictly looking for direct threats and countering them.

As mentioned earlier, training these types of skills in a computer-based training environment presents a few challenges. One such challenge is illustrating profiling cues in isolation without the experiential framework of a real-world setting, while showing that only combined cues have meaning within in a certain context and baseline. Moreover, providing the basic declarative knowledge associated with each of the profiling domains to further support the 5-day and 10-day face-to-face courses.

To address these challenges, we adopted a strategy that informs trainees on basic profiling terminology, but only within the perspective of hand-picked visual scenes. It was quite difficult to find static images with enough visual "richness" to illustrate several cues at once, but we thought it necessary to illustrate cues only as a set, within a given context. To that end, it was our intention to provide cues in the most ecological form possible, rarely alone, and never without context. This was primarily rooted in the concept of *situated cognition,* where knowledge is inseparable from context, and acquisition of this knowledge occurs within rich, authentic contexts and situations (Reynolds, Sinatra, & Jetton, 1996). Figure 4 is an example of the type of combat relevant contexts we used to provide trainees with visual depictions of cues and thorough explanations of profiling terminology.

Figure 4. Illustration used in Kinesics activity

After progressing trainees through a variety of these profiling vignettes, or scenes rich with potential cues, we advance them to a scenario with scenes containing elaborate baselines and background narration. In doing so, we further reflect situated learning by providing contextual storylines to *situate* profiling concepts in practice (Brown, Collins & Duguid, 1989). Trainees work toward a *higher-level* activity where they identify

critical cue combinations across given baselines, and make decisions regarding the most appropriate course of action.

Overall, it was our aim to advance trainees through a variety of situations, allowing them to naturally construct mental models about the interaction between cue combinations and context. Reflecting the earlier mentioned guidelines of constructivism, this progression of activities contains a structure and sequence that continually builds upon previously learned information (Bruner, 1966). Moreover, it delivers a culminating activity, where trainees can both apply their knowledge, and generate inferences *beyond the information* to guide critical decisions. To support this overarching strategy, we introduce two profiling activities that cycle through a variety of basic tactics.

To start, we provide trainees with a basic profiling activity where they *actively search* for profiling cues within in a given scene. With each profiling domain we provide trainees with a different photograph to scan, and subsequently, a different set of profiling cues to find. The activity is set up such that the trainees locate cues by scrolling their mouse over the image. Once they have rolled over a highlighted cue, they are prompted to click on it for more detailed information. Our intention here is to get trainees actively involved in obtaining information, rather than just passively receiving descriptions of profiling cues.

Figure 5. Screenshot of basic profiling activity with a cursor activating a highlighted cue

As Figure 5 illustrates, the cursor has activated a selected cue, in this case, the direction in which the two men are facing. The trainees are then instructed to click on the area to gain detailed information on the characteristics of the cue, how it can be represented, and why it matters for combat operations. Other visuals of this cue are also shown to provide the trainees with alternate visual perspectives of that particular cue, both

within the profiling vignette, and in isolation from any context. Figure 6 shows the general layout of how this information is presented to the trainee.

Figure 6. Screenshot of basic profiling activity showing detailed information about a selected cue

Once all cues/indicators are located, important take-away points are revealed on the bottom right of the user interface. These points include information specific to that particular highlighted cue, such as *may indicate possible leader* or *could indicate direction of interest.* They are then directed to drag those key points into the appropriate cue containers. This action can be seen in Figure 7. Trainees then get immediate feedback on whether they correctly matched key take-away points to the cue or indicator.

Figure 7. Final phase of the profiling activity where trainees match key points to the found cues

Once they receive feedback, they are given a likely interpretation of the visual scene, including descriptions of the found cues. Now, since the true context, and subsequently the interpretation, cannot be fully determined by this picture alone, we inform the trainees that our interpretation is only *likely*. Trainees are told that in order to get an accurate interpretation of

any situation they would need to establish accurate baselines and gather cultural information about that environment. The interpretation is only to provide them with an example of how cue groupings may inform a situation. The important point here is that trainees recognize that a cue by itself often provides limited intelligence about potential actions, and that with every added cue, a more detailed picture emerges.

It must be noted that each of these basic profiling activities is confined within a *single* profiling dimension, and function only to instruct on the characteristics of each cue within a given environment. In other words, each profiling domain (e.g., kinesics, biometrics, proxemics, etc.) has its own separate profiling activity. This structure allows the learner to understand each individual profiling domain before being required to analyze images containing multiple cues from multiple profiling domains.

Once trainees complete instruction in each profiling domain, they advance to a higher-level activity in which they engage in a combat relevant scenario. In this scenario activity our primary aim was to incorporate elaborate and dynamic baselines to exemplify how these interact with cue combinations, and more importantly, feed into decision-making. The scenario itself takes on a guided role-playing structure, where the trainee plays the part of a unit leader stepping in on patrol relief for another unit. The unit leader, via radio communications, first provides the incoming patrol unit (i.e., the trainee) with detailed information on the typical baseline of that area. This can be seen in Figure 8.

Figure 8. Screenshot of topographical map and baseline information for scenario activity

The operator then updates the trainee on new information gathered from their initial patrol that day. This was an important step in the scenario in that it gave us an opportunity to illustrate the dynamic nature

of a baseline. For example, in this particular instance, within the initial baseline of that area, *women tend to stay inside throughout the whole day*, but their patrol that day reports new information about a *local festival encouraging women to greet strangers with gifts on the streets*; thus, changing the baseline.

We illustrate this by adding new points to the baseline and crossing out ones that were no longer applicable. This information is shown on the far left part of the trainees' interface, with a button below to access the full script of his report. Once trainees are caught up on all baseline information, they are then prompted to click on their target relief point on the interactive topographical map. From that point, their patrol begins.

With a now street-level perspective, trainees are confronted with a visually rich profiling vignette, similar to the ones used in the previous activities. They are directed to reveal all relevant profiling cues within the scene by scrolling their mouse over the image. When they scroll over a pertinent cue, or set of cues, that specific area will blink, prompting them to click on it. Once the trainees click on the area, they are provided with detailed information on what the cues are and how they contribute to the overall interpretation of the scene. Additionally, hidden profiling cues are revealed, just above the profiling scene. As depicted in Figure 9, three cues were discovered.
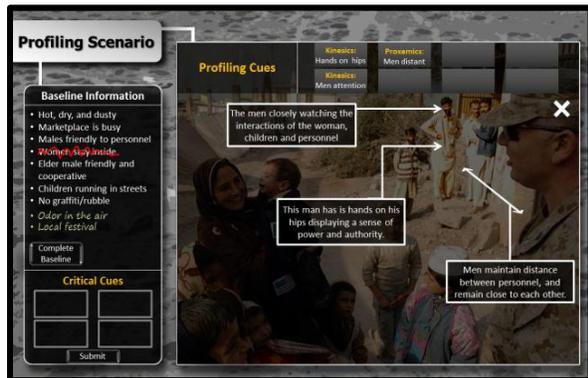

Figure 9. Screenshot of profiling cue revealed

Once trainees have found all the relevant profiling cues within that scene, they are directed to choose the most critical cue combination (i.e., cues demanding action) to both that scene, and the outlined baseline. We provided them with four containers on the bottom left of the interface where they would drag and drop the cues they deemed critical to their operations. Note that assessing the performance in this scenario is challenging, given the fact that there is no truly right or wrong answer.

In an attempt to reduce subjectivity, we tailored provided cues to the specific baseline description. Thus, some of the cues were directly aligned with the baseline, and others were clearly anomalous. This distinctness allowed for a more generic feedback in the form of a likely scene interpretation. Similar to the previous activity, this interpretation accounted for all possible cues, critical or not. In other words, we provided explanation as to why certain cues, and/or combinations, were considered critical and others not using baseline information for support. Ultimately, some cue combinations are more important than others, and these cues should stand out based on the information provided in the baseline.

Once trainees receive the likely interpretation of that particular scene, they are prompted to take action. In accordance with the Combat Hunter curriculum, there are three main actions to consider: *kill*, *capture*, or *contact*. For the purposes of this scenario we also include another option: *leave it alone*. Prior to the scenario, trainees were fully instructed on the meaning and implications of these options, and how reduced choices may contribute to more rapid decision-making. Upon the selection of a course of action, trainees are provided with feedback on that action. For example, the following is feedback specific to the option *capture*:

> **Capture** *(detain the suspicious men) may be too quick an action. You have no supporting evidence for their detainment and may cause negative sentiment in the area towards US personnel.*

> **Capture** *(by way of video or photo) may be the better option. This way you can see if any of the men have been tagged before, and now they are entered into the system, where further surveillance can be maintained on them. This option is utilizing the Combat Multiplier of Tactical Patience, controlling the tempo of engagement to your best advantage.*

This feedback provides a rationale for why certain methods of capture may be more suitable than others, while also integrating previously learned concepts, like *tactical patience*, into the explanation. Upon review of the feedback, trainees are then returned to the main scenario interface, and directed to continue their patrol at another location. Personnel would then run through this process again, but within a new scene (i.e., next top on their patrol) that incorporates a different set of cues.

Media Tactics

We utilize several media tactics that not only support our overarching strategy, but align with appropriate media principles to enhance personnel engagement and learning. With limited text and interactivity as our primary intention, we had to be careful not to inundate learners with irrelevant, seductive details (See Schraw & Lehman, 2001; Mayer, Heiser, & Lonn, 2001). As such, we structure our design around media principles that *directly* support the comprehension of content, and reduce extraneous demands on the learner. These principles are specific to how user interfaces are designed and how content is presented in computer-based instruction (Hays, 2006). Table 1 provides recognized media principles which were used in our computer-based training support system.

Table 1. Media principles used in the design of computer-based training support system

Media Principle	Citation
Multimedia: Integrate visuals with words.	Mayer, 2003
Temporal Contiguity: Utilize appropriate timing for text and visuals.	Mayer, 2003
Irrelevancy: Ensure all visuals serve a direct instructional purpose.	Mayer, Sims, & Tajika, 1995
Modality: "Students learn better from animation and narration than from animation and on-screen text".	Mayer, 2003, p. 35
Redundancy: Ensure learning through repetition of pertinent features.	Levie & Dickie, 1973
Interaction: Utilize an engaging, interactive interface.	Najjar, 1998
Voice: Narrator should be human, with minimal accent.	Mayer, 2003
Personalization: Narration should be in a conversational voice.	Mayer, 2003
Signaling: "Multimedia explanation should include highlights of the key steps …"	Mayer, 2003, p. 47

Overall, our media approach directly supports the scope of our instructional strategy. Media tactics were not only used to enhance the delivery of materials, but also align to the main themes of the course. It was our intention to apply these tactics to develop meaningful features of our activities, rather than just to amuse learners. Ultimately, our approach focuses on supporting the cognitive engagement of the learners through rich, interactive, and authentic experiences.

REVIEW OF INSTRUCTIONAL CHALLENGES

Challenge 1: Demonstrate that a cue by itself often provides limited intelligence about potential actions, and that with every added cue, a more detailed picture emerges.

To address this we provide the trainees with scene interpretations clear enough to highlight the additive impact of cue combinations over the more straightforward descriptions of individual cues. To do this we illustrate cues specifically tailored to the given baseline description. Thus, some of the cues were directly aligned with the baseline, and others were clearly anomalous. This distinctness allowed for a more generic feedback in the form of a likely scene interpretation. In other words, we provide explanation as to why certain cues, and/or combinations, were considered critical and others not using baseline information for support.

Challenge 2: Illustrate profiling cues in isolation without the experiential framework of a real-world setting, while showing that only combined cues have meaning within in a certain context and baseline.

To address this we provide cues in the most ecological form possible; rarely alone, and never without context. This was primarily rooted in the concept of situated cognition, where knowledge is inseparable from context, and acquisition of this knowledge occurs within rich, authentic contexts and situations.

Challenge 3: Provide all declarative knowledge associated with each of the profiling domains, while maintaining both a high-level of visual involvement and minimal usage of text.

To address this challenge, we adopted a strategy that informs trainees on basic profiling terminology, but only within the perspective of hand-picked visual scenes. These scenes contained enough "richness" to include a variety of cues representations.

Challenge 4: Familiarize trainees with the importance of cultural context without descending into training regional-specific behaviors.

To address this we provide trainees with exposure to a wide-range of different cultures, illustrating the dynamic nature of cultural values, and how they influence human behavior through a variety of activities. We challenge trainee preconceptions about different cultures and their ideologies, and

further illustrate that the cultures and customs of the local population are imperative for establishing appropriate baselines.

Challenges 5: Illustrate the impact specific cue combinations may have on decision-making when guidelines are subjective with no concrete *rights* or *wrongs*.

We addressed this challenge by first providing feedback on the specific cue grouping within a profiling vignette. Trainees were given a likely interpretation of the visual scene, including descriptions of the found cues. The interpretation is to provide them with an example of how specific cue groupings may directly inform a situation.

CONCLUSION

In addressing the need to improve awareness and vigilance in irregular and ambiguous theater of operations, the Combat Hunter curriculum was created. To further advance and support this training, a computer based pre-training course was recommended. The objective of the computer-based course is to ensure that trainees possess the core skills needed in order to excel in the hands-on instruction and practical applications of the corresponding face-to-face Combat Hunter course. This paper discussed the challenges of training a specific subset of Combat Hunter skills, that of c*ombat profiling*, in a computer based environment, and the means by which they were overcome. Such challenges included familiarizing trainees with the importance of cultural context, illustrating profiling cues within isolated contexts, and offering specific, relevant feedback on the identification and analysis of unclear indicators in a given environment.

Overall, our computer-based training utilizes both a comprehensive strategy that provides an environment where learners can be active in their own learning, and a variety of media tactics to increase learner engagement. Utilization of these methods is intended to enable preparation for training in advanced combat profiling, by focusing on the *interpretation* of cues within a given context and by further supporting key prerequisite declarative knowledge. It is our intention to ensure that trainees will have the skills needed to excel in the face-to-face Combat Hunter course.

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