Live on Livestock! Hosting an Agricultural Preparedness Training for Emergency Responders using Mock Broadcasts

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Introduction

Videography is a great form of visual and audio communication (Stenzler & Eckert, 1996). These elements provide a greater impact on understanding and retention for learners because they target all parts of the three cognitive science principles of learning to improve learning in the human processing system, which include multimedia presentation, sensory memory, and working memory (Mayer, 2005). In Mayer's (2014) Cognitive Theory of Multimedia Learning (CTLM), he described five cognitive processes in multimedia learning—selecting relevant words in narration, selecting relevant images from illustrations, organizing selected words into relevant messages, organizing selected images into visual representations, and integrating pictorial and verbal elements with prior knowledge.

When training individuals to respond to a large-scale emergency, mock videos and hypothetical scenarios based on real-world applications can prepare responders to retain important response techniques. Guided by the U.S. Department of Homeland Security (U.S. DHS, 2025) *National Response Framework*, key elements of responding to a natural disaster or emergency are, "(1) engaged partnership; (2) tiered response; (3) scalable, flexible, and adaptable operational capabilities; (4) unity of effort through unified command; and (5) readiness to act" (pp. 5–6). As a result, we designed five mock videos to integrate into [Program] to raise awareness about the scope of the agricultural industry in a crisis scenario (Irlbeck, 2023) and to successfully perform a criminal investigation using increased agricultural literacy.

How it Works

Funded by the United States Department of Agriculture (USDA), National Animal Disease Preparedness and Response Program (NADPRP), the purpose of the Agricultural Preparedness Training (APT) was to provide agricultural preparedness training for law enforcement personnel, Federal Bureau of Investigation (FBI) officers, emergency managers, Extension agents, and agricultural educators. Due to the complex nature of the agricultural industry, responding to an agricultural emergency requires extensive knowledge of the agricultural industry and stakeholders when investigating potential criminal activities. At the beginning of [Program], we hosted a four-hour, mock crime scene with an event that unfolded at a state youth livestock show. The mock crime scene started as a criminal-intent scenario at a state fairgrounds where multiple animals died. We then introduced additional concerns, such as botulism and zoonotic risks to the scenario, ending with guiding investigators to review a diseased water source. Several actors provided clues to participants, and the news broadcasts served as key timing elements throughout the event.

The crime scene planning team consisted of a panel of experts including state livestock and public health veterinarians, retired law enforcement, federal agents, [State Department of Agriculture] personnel, emergency managers, Extension personnel, educators, and agricultural communicators. In this scenario, we introduced elements of the crime scene using mock emergency broadcast videos. The goal of the videos was to illustrate the impact of the media during an emergency and to raise awareness of how quickly misinformation can spread. We designed the videos to enhance realism, context, and retention of key events (Mayer, 2014).

The first step in creating the videos was concept development. Here, we identified our target audience and how to align the topic of the video with the timing in the mock crime scene.

We then began scriptwriting. This covered four days of broadcasts that included news anchor segments, field reports, bystander "live" interviews, law enforcement personnel, state veterinarians, and public health officials. Third, we developed five video segments (see Table 1) to be played at strategic points in the mock crime scene. We used screens and outdoor audio equipment to project the videos and audio in the arena where the mock crime scene was staged. At the end of each video, the participants returned to the scenario to identify next steps.

Table 1

Summary of News Segments in Mock Crime Scene

Video 1: Introduction of Scenario and Event
Video 2: Quarantined Livestock Animals and Inflated Tension through Social Media Posts
Video 3: Raised Concerns for Possible Botulism
Video 4: Raised Concerns for Potential Zoonotic Elements
Video 5: Raised Awareness of Animals Passing from Infected Water Source at Local Ranch

Note. Each video contained multiple actors and news anchors. These summaries are designed to illustrate the overall role of the video in the mock crime scene.

Results to Date

The team of subject matter experts expressed their appreciation for the introduction of agricultural concepts via media sources, which improved literacy of the participants when conducting the crime scene. For example, one of the videos highlighted a possible risk for botulism, which is a serious illness that attacks the nervous system, resulting in labored breathing, muscle paralysis, and in some situations death (U.S. Centers for Disease Control and Prevention [CDC], 2024). Botulism can be found in infected feed or water sources. Many of the veterinarians stated they were thankful the videos explained botulism in simple terms because they helped participants understand the scientific risk of the disease during the investigation without having to be experts in epidemiology. Other participants stated they enjoyed the real-world feel of the videos and their ability to break up the monotony of the investigation.

Advice to Others

As noted earlier, the target audience included law enforcement, federal agents, emergency stakeholders, Extension personnel, and agricultural educators. It involved hands-on and application-based instruction utilizing visual communication to enhance the experience. As a result, we recommend incorporating a broad team to leverage multiple subject matter experts if designing a separate hypothetical scenario. We also recommend providing a wireframe for the different clips and sharing the scenario timeline early to increase efficiency. We also stress the importance of staying organized when filming to ensure all scenes are captured correctly. When creating a scenario, ensure it is relevant to the audience and adjust specific jargon. We learned the importance of not using agricultural terms that were too scientific.

Cost and Resources

We used a DJI Osmo Pocket 3 camera when capturing the field recordings and a Canon XA15 camcorder in the [University] studio. Associated media equipment, such as a camera, a microphone, and editing software, will be necessary to create videos, as well as a script/wireframe and actors for a mock scenario. A backdrop and AV equipment are also needed to display the videos with audio to the live audience.

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