

On Message:

Using an Online Interactive Simulation to Train Crisis Communicators

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ABSTRACT

Crisis communication research emphasizes the necessity for organized, informed, and effective strategies when engaging audiences. However it is often difficult to apply best practices from academic literature in real life situations. One way to bridge this gap is with an interactive simulation, which lets participants to test their ability to operate in a crisis. This paper describes the creation and implementation of an online crisis communication simulation developed for the Department of Homeland Security (DHS). The simulation uses a server-side software platform called ICONSnet™, which allows complexity in its design with both minimal overhead costs and human facilitation difficulties.

Keywords

crisis communication and simulation, first response, public information, training

INTRODUCTION

In his path-breaking book *Simulation and Society*, John R. Raser offers the following thought: “No one would think of putting a neophyte pilot in a multi-million dollar jet and trusting to luck. A medical student does not have unlimited access to cadavers, no matter how many people will their bodies to science. Inexperienced gunners cannot learn to hit a target by reading books or listening to lectures. The acquisition of any skill requires practice, and if practice is not feasible in the real environment, simulations are the obvious answer” (Raser, 1969). A rich literature on interactive and experiential learning has developed over the past forty years, but Raser’s comment speaks to a very particular aspect of the need for practice – when the real world situation for which you are training occurs infrequently, and the consequences of failure are extremely high, some medium for learning must be found which allows for trial and error at low cost.

Communication and public information are critical elements of crisis preparedness and response at all levels of government in the United States. In the event of a natural disaster or a terrorist attack, ensuring that the officials responsible for communicating critical and timely information with the public (and media) are well trained is a priority. The Science and Technology Directorate of the Department of Homeland Security (DHS) funded the National Consortium for the Study of Terrorism and Responses to Terrorism (START) to carry out an extensive review of the literature on crisis and risk communication across several disciplines, including communications, political science, and psychology. The review led to the creation of a manual of best practices for crisis communicators and a series of training modules based on that manual: *Training in Risk and Crisis Communication (TRACC)*. The University of Maryland’s ICONS Project, a pioneering program which has designed participant-driven simulations for education and training for over thirty years, was contracted to create the simulation which supports TRACC.

BEST PRACTICES IN CRISIS COMMUNICATION

The TRACC training relies on current social science and empirical work in the field of risk and crisis communication to distill research into manageable learning outcomes information for government practitioners. Content spans general media consumption, media consumption for risk communication, and reasons for both

using and not using social media for risk information. The training assumes that practitioner exposure to media practices can vary – as not all emergency responders will have a background in communication.

The core conceptual focus of TRACC is on three key principals drawn from the START report *Understanding Risk Communication Best Practices*: “(1) that understanding the characteristics of an audience is essential to developing effective risk communications efforts; (2) that how, when, and by whom a message is delivered impacts its effectiveness; (3) that communicators must continually adapt to changing situations” (Janoske, Liu and Sheppard, 2013). Audience trust in risk communicators is found to be a critical element in message effectiveness (Earl, 2005; Kaspersen, Golding and Tuler, 2005). So is the emotional engagement of publics (i.e., fear or apathy), and their perception of their proximity to risk, and the tolerability of that risk (the so called tolerability of risk, or ToR framework) (Covello, Peters, Wojtecki and Hyde, 2001; Jin, 2010, Boudier, Slavin and Lofstedt, 2009).

The literature also supports the idea of paying particular attention to ‘special needs publics’ such as the elderly, children, and specific demographic groups. In a crisis, messaging tailored to the needs and media outlets most used by these audiences is most likely to be effective (McComas 2010; Norris et al, 2008). Finally, TRACC incorporates lessons learned on the best ways to frame messages and public statements.

When discussing differences in traditional and social media, the training first highlights channel characteristics, drawing on data from the Pew Research Center’s Internet and American Life Project (Pew, 2013) and START’s *Social Media Use During Disasters* report (Fraustino, Liu and Jin, 2012). Important nuances, including the continuing preeminence of television as a news source during crises, deliver background on general media use and consumption.

Units on media consumption of risk information also incorporate findings from *Social Media Use During Disasters*. While traditional media use during crises is more established in research, START explored why people use social media specifically during disasters. The literature shows that they engage for a variety of reasons, including convenience, social norms, personal recommendations, humor and levity, information seeking, timely/ unfiltered information, and to check in with family and friends (Fraustino et al, 2012). Knowing behavioral patterns and

rationales helps responders engage specific audiences – what is referred to in communications studies as end user justification.

The TRACC curriculum also discusses reasons for not using social media for risk or crisis communication (Fraustino et al, 2012). Top reasons include; fears about privacy and security, accuracy concerns, access issues, and knowledge deficiencies. While social media research has received attention and praise in recent communication research, data indicate that a certain subset of the population is not reachable online. The TRACC Media Relation's module, breaks down audience characteristics and typical use patterns (e.g. among Internet users 55 and older, 33% receive their news online compared with 65% of Internet users aged 18-34 years old (Harris interactive, 2010).

Basic media landscape information sets the stage for further discussion of media channel selection, message objectives, and putting it all into practice. Completing the media relations module assists in distributing up-to-date information on the current media landscape, facilitating media channel analysis, and understanding and applying formal and informal media rules of engagement to interact with journalists and social media content creators.

The simulation then asks participants to put into practice the skills and lessons they have been exposed to in the curriculum.

WHY SIMULATION?

Over the last forty years, studies have documented the value of games and simulations to enhance both participant perception of the learning experience and performance across a wide range of assessment tools and other indicators (Faria, 2001; Schepereel, 2005; Asal, 2005; Asal and Blake, 2006; Goosen, Jensen and Wells 2001; Starkey and Blake, 2001). Additionally, findings from behavioral psychology have highlighted how much more effective stories with context are at teaching concepts than simply presenting the concepts in their theoretical form (Nisbett and Borgida, 1975, Kahneman, 2011). In a training context, the simulation plays the role of the 'story,' helping embed lessons learned by participants.

Virtually all emergency response and management organizations employ drills to practice response protocols and ensure the accuracy of plans and readiness of equipment. Work such as that of Smith (Smith, 2004) and Tsuchiya & Tsuchiya

(Tsuchiya and Tsuchiya, 2000) has focused on how the use of simulations in training exercises enhances organizational as well as individual learning outcomes – a critical issue for emergency response and management agencies, which depend on individuals performing highly themselves, but also highly as part of a team with set routines based on best practices. A simulation used in a training like TRACC is different, from a readiness drill in that it focuses on human decision making in the face of uncertainty. Adhering to known best practices is still vitally important, but the media response is more fluid and less predictable than say, practicing which alternate routes to use in incident response where there are road closures, or knowing the locations of fire hydrants. The ICONS Project has previously worked on this exact issue. For example, in 2008, ICONS designed a successful simulation for Federal Emergency Management Agency (FEMA) for use in training first responders on leadership during crisis situations in which National Incident Management System (NIMS) protocols were broken or did not apply (FEMA course MGT-362: Collaborative leadership in Homeland Security).

The military community uses exercises similar to our training simulation, and Peter Perla of Center for Naval Analysis has written on the difference between these (in this instance 'wargames') and live drills: "Wargames... focus on human behavior, particularly human decision making. The learning that comes from wargames comes from both the experience making decisions (playing) and from the process of understanding why those decisions are made (game analysis)" (Perla, 1991). The evaluation of the decisions made by participants about what to communicate, and when, could as easily be made using homework presented in a traditional classroom format. The value added of the simulation comes in their discovery of how *their interaction and decision making processes influence those choices and why*. Part of the appeal of this approach is teaching trainees to examine how the impact of factors not anticipated in paper planning documents.

Traditional table top games or exercises have also been used in the field of communications, but their utility is limited by their capacity to replicate the pace and complexity of communicating in a real crisis environment. In the aftermath of the very real tragedy in Boston, more than 3 million tweets were sent in the first sixty minutes – using just the top three hashtags. Only two and a half hours after the blasts, CNN had already begun using the word 'Terrorism' in its headlines despite no official announcement. The TRACC simulation uses the ICONSnet™

software platform to create a training environment which allows complexity in its design with both minimal overhead costs and facilitation challenges.

THE PLATFORM: ICONSnet

ICONSnet™ is an online, text-based simulation platform designed to facilitate human-to-human interaction. It supports the running of participant driven, Human in the Loop (HIL) simulations. The ICONSnet™ application itself consists of an HTML/CSS/JavaScript front end user interface, an Oracle PL/SQL middle tier utilizing Oracle Application Server and mod_plsql, and an Oracle RDBMS back end database for persistent data storage. Originally developed for university-based research and academic use, the current version of ICONSnet™ has supported the running of over 700 education, training, and policy simulations in all 50 states and over 25 countries. ICONSnet™ supports programs where the participants are in the same geographic location as well as ‘distributed’ simulations, where they participate from many locations simultaneously.

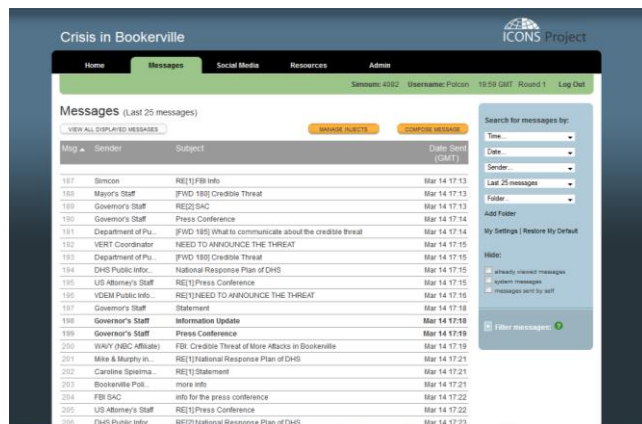


Figure 1: Messaging Screen

The platform can be configured with a number of features including synchronous and asynchronous messaging (Fig. 1), a social media suite (Fig. 2), conferencing, ‘actions’ that impact the direction of the simulation, a tool for submitting tailored reports to facilitators, and an additional tool for creating reports and drafting and voting on proposals. Each research or training agenda drives the specific tools used for a particular simulation. For a training program like TRACC, ICONSnet™ provides participants with the experience of overwhelming message chaos which no table-top exercise can mimic. It allows the participants to interact with dozens of separate entities, including media outlets, elected officials, community personalities, and more, while requiring minimal facilitation effort.

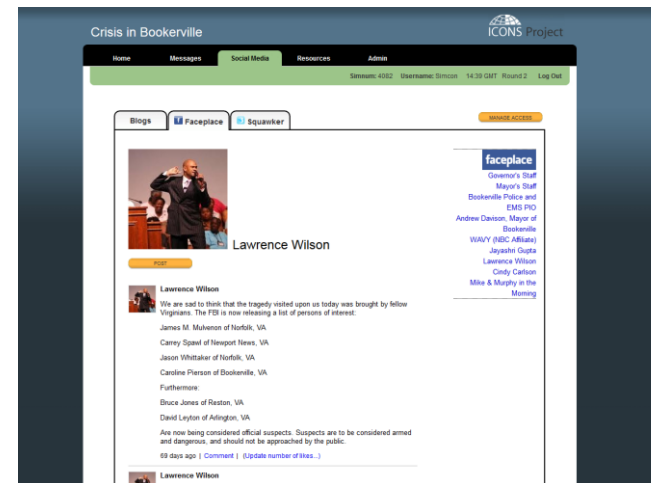


Figure 2: Social media Screen

THE SCENARIO: CRISIS IN BOOKERVILLE

Critical Design Considerations

The scenario for the TRACC training is a domestic terrorist attack in a fictional town called Bookerville, in the US State of Virginia (author citation). In the design of any simulation like this one, one of the most critical elements is balancing realism and ‘playability.’ The designer has to identify the key elements in the scenario that reinforce desired learning outcomes – those will have greater fidelity to detail than other aspects which need to be abstracted in order to achieve a manageable level of complexity for a training.

In the case of TRACC, the simulation needed to support participant focus on the best practices identified in the research: characteristics of the audience; how, when, and by whom a message is delivered; continuous adaptation to a changing situation, and the importance of audience trust. The scenario focuses on different sectors of publics in Bookerville, and the media and public figures through whom and with whom the trainees need to communicate in order to effectively deliver their message. The original scenario was significantly revised after pilot testing (see below).

General Scenario (Abridged)

Bookerville, a municipality incorporated in 1961, is located near the Norfolk metropolitan area of Virginia in the United States. As of the 2010 census, the population was 96,000. The city has limited public transportation, and has access to the major highways, airports and other public transportation of the greater Norfolk area. Downtown features a concentrated government and business district including the Courthouse, the main police headquarters, and the Bookerville Sheriff’s Department. Located within a short driving distance from downtown is Agnes Joyce Landing – a leading, middle class retirement community with approximately 6,800 residents. Bookerville is located in Virginia’s 4th Congressional District. The Mayor, Andrew Davison, is a Republican former State Senator. City Council Chair, Caroline Spielman, represents the heavily and historically African American district downtown.

The Incident

At 9:30 a.m., a blast rocks the parking garage of a private security firm, the Demetrius Group, causing panic and at least two fatalities. The building is quickly evacuated and police, fire, and EMS personnel responded to the scene. At 9:55 a.m., two more explosions simultaneously occur. The Chief of Police immediately directs that the area be secured and operations functions be relocated as best as possible to the secondary station adjacent to the Fire & EMS Headquarters. More chaos follows as first responders become uncertain as to whether the explosions are accidents or deliberate and the state and federal governments become involved...

GAME PLAY AND OBJECTIVES

The trainees begin their experience representing the members of the Joint Information Center formed as part of the response to the attack – which they do not yet know is an attack. Over the course of the next four hours, they will receive news and orders from the operational responders and from political leaders instructing them on what to message to disseminate. They will also be bombarded with hundreds of requests for information from media outlets, community leaders, and the general public.

The goal is for trainees to apply the knowledge and lessons they have been learning in the TRACC program to craft *effective messages for different publics* in Bookerville, *use appropriate media channels* (over twenty different television, newspaper and radio stations are represented, as well as dozens of individual social media pages and personalities), and *maintain control of their message*. Challenges they will face include:

- A first responder giving an on the street TV interview claiming the blast could only have been a sophisticated act of terrorism – before the FBI has confirmed to the trainees that they are investigating the incident as potential terrorism.
- Mixed signals from the governor of Virginia and the mayor of Bookerville who have different priorities and sometimes communicate

directly with the public information which has not been vetted or packaged by the trainees.

- Inaccurate and rumor-based ‘news’ being reported on social media, and subsequently picked up on main stream media.

The simulation concludes with a live press conference for which the trainees must prepare the governor, mayor, and City Council chair’s statements – and prepare them for the likely questions they will receive from the media.

CONCLUSION: REACTIONS TO INITIAL USES OF TRAINING

The simulation portion of the TRACC training was pilot tested in 2013 with groups of PIOs and other communications officers from both government agencies in Maryland, Virginia and Washington D.C., and large NGOs. The evaluation reports found that participants “enjoyed the format of the simulation ($M = 4.33$ on a 5-point scale) and found the simulation contained valuable information ($M = 4.50$). Participants also agreed that the facilities in which the simulation occurred were conducive to learning ($M=4.38$) and that they learned from other participants during the simulation ($M = 4.50$).” The pilot also offered numerous anecdotal examples of the importance of employing the research findings in a practice setting. During the training, for instance, participants were fiercely critical of the focus the White House placed on tweeting about the upcoming press conference, following the Boston Marathon bombing. Yet during the simulation, they adopted the same pattern, using much of their social media activity to promote the press conference at the close of the exercise. (Petrun, et al, 2013).

Participants in initial pilot testing also offered substantial feedback on revisions to the scenario designed to focus more closely on the learning objectives for the training. Some information on relationships between key characters in Bookerville that proved distracting rather than helpful to the participants was removed, and the roles of some of the agencies involved were changed and clarified. The facilitation structure was also changed to focus on incorporating feedback into the simulation as it progressed, and to give the participants greater ability to positively impact the

trajectory of the story (Petrun, et al, 2013).

Since pilot testing, the simulation has been used several times by Maryland government agencies, and the designers continue to accept and incorporate feedback to improve it.

REFERENCES

(ENSURE THAT ALL REFERENCES ARE FULLY COMPLETE AND ACCURATE AS PER THE EXAMPLES)

1. Asal, Victor, (2005) “Playing games with international relations,” *International Studies Perspectives*, 6: 3 August.
2. Asal, Victor and Elizabeth Blake, (2006) “Creating simulations for political science education, *Journal of Political Science Education* 2: pp. 1-18.
3. Boudier, F. Slavin, D. & Lofstedt, R.E. (eds), (2009) *The Tolerability of Risk: A New Framework for Risk Management*, London, Routledge.
4. Covello, V.T., Peters, R.G., Wojtecki, J.G. & Hyde, R.C., (2001) “Risk communication, the West Nile Virus epidemic, and bioterrorism: Responding to the communication challenges posed by the intentional or unintentional release of a pathogen in an urban setting,” *Journal of Urban Health*, 78(2), pp. 382-391.
5. Earl, T.C., (2005) “Thinking aloud about trust: A protocol analysis of trust in risk management,” *Risk Analysis*, 24(1), pp. 169-183.
6. Faria, A.J., (2001) “The changing nature of business simulation/gaming research: A brief history.” *Simulation & Gaming*, 2001, pp. 97-110, March 32.
7. Fraustino, J. D., Liu, B., & Jin, Y. (2012). *Social media use during disasters: A review of the knowledgebase and gaps*. Report to the Human Factors/Behavioral Sciences Division, Science and Technology Directorate, U.S. Department of Homeland Security.
8. Goosen, Kenneth R., Ron Jensen and Robert Wells (2001) “Purpose and

- learning benefits of simulation: A design and development perspective.” *Simulation & Gaming* 32: pp. 21-39.
9. Harris Interactive (2010). Troubles for traditional media: Both print and television. Retrieved from: <http://www.harrisinteractive.com/NewsRoom/HarrisPolls/tabid/447/mid/1508/articleId/604/ctl/ReadCustom%20Default/Default.aspx>
 10. Janoske, Melissa, Brooke Liu and Ben Sheppard (2011) “Setting standards: Best practices workshop for training local risk communicators,” Report to Human Factors/Behavioral Science and Technology Directorate, US Department of Homeland Security.
 11. Jin, Y., (2010) “Making sense sensibly in crisis communication: How publics’ crisis appraisals influence their negative emotions, coping strategy preferences, and crisis response acceptance,” *Communication research*, 37(4), pp. 522-552.
 12. Kahneman, Daniel, (2011) *Thinking Fast and Slow*, Farrar, Strauss and Giroux, New York, pp. 172-174
 13. Kasperson, R.E., Golding, D. & Tuler, S., (2005) “Social distrust as a factor in siting hazardous facilities and communicating risks,” *Journal of Social Issues*, 48(4), pp. 161-187, 1992.; Lofstedt, R.E., *Risk Management in Post-Trust Societies*, London, Palgrave Macmillan.
 14. McComas, K.A., (2010) “Community engagement and risk management,” in R.L. Heath (ed.), *The Sage handbook of Public Relations*, 2nd. Ed., , pp. 461-476, Thousand Oaks, CA, Sage Publications.
 15. Nisbett, Richard E. and Eugene Borgida, (1975) “Attribution and the psychology of prediction,” *Journal of Personal and Social Psychology*, 32, pp. 932-943
 16. Norris, et al., (2008) “Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness,” *American Journal of Community Psychology*, 41(1-2), pp. 127-150.
 17. Perla, Peter P., (1991) *The Art of Wargaming: A Guide for Professionals and Hobbyists*, Annapolis: Naval Institute Press
 18. Petrun, Elizabeth L., Katherine Worboys Izsak, Brooke Fisher Liu, Stephanie Madden, Melissa Janoske, and Julia Daisy Fraustino. “Training in Risk and Crisis Communication (TRACC): Evaluation and Recommendations,” Report to the Homeland Security Advanced Research Projects Agency, Science and Technology Directorate, U.S. Department of Homeland Security. College Park, Md.: START, 2013.
 19. Pew Internet and American Life Project. (2013, February 14). Pew Internet: Social Media. Retrieved from <http://pewinternet.org/Commentary/2012/March/Pew-Internet-Social-Networking-full-detail.aspx>
 20. Raser, John R, (1969) *Simulation and Society: An Exploration of Scientific Gaming*, Boston: Ally and Bacon, Inc. p. 118.
 21. Schepereel, Christopher M., (2005) “Changing mental models: business simulation exercises,” *Simulation & Gaming*, 36, pp. 388-403, March.
 22. Smith, Denis. (2004) “For whom the bell tolls: Imagining accidents and the development of crisis simulation in organizations” *Simulation & Gaming*, 35: pp. 341-362.
 23. Starkey, Brigid A., and Elizabeth L. Blake. (2001) “Simulation in international relations education.” *Simulation & Gaming* 32, 4.
 24. Tsuchiya, Shigehisa and Tomoaki Tsuchiya. (2000) “A review of policy exercise interactive learning environments” *Simulation & Gaming*, 31: pp. 341-362.