Navigating Troubled Waters: Applying the IDEA Model to the Flint Water Crisis

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Abstract: This study examines the instructional crisis communication surrounding the water crisis in Flint, Michigan. Although pre-crisis government communications were widely criticized for their failure to adequately warn the public about dangerous levels of lead and other carcinogenic chemicals in Flint’s water, instructional messaging during the crisis has not received the same level of attention. This study employs qualitative content analysis to examine the website content from the EPA, U.S. Department of Health and Human Services, Michigan governor’s office, Genesee County Health Department, and Flint mayor’s office through the lens of the IDEA model during the height of the crisis. The instructional content published to these agencies’ websites fits within the IDEA model framework and serves as effective instructional communication about the health concerns facing residents. Explanation and action were most prominently featured across the content, although internalization strategies were also used to varying degrees. The content was distributed and widely shared across agency websites, especially at the federal and state level. Future areas of research include how semantic and rhetorical choices in message content and structure may enhance elements within the IDEA model and how using images can increase message effectiveness.

Keywords — Crisis communication, disaster, IDEA model, instructional communication, risk communication

INTRODUCTION

The Flint water crisis began its slow build-up with devastating, long-lasting effects in April 2013 when Genesee County announced that the City of Flint would be moving its water source from the Detroit water system to the Flint River until a new pipeline connecting the city to Lake Huron was completed. In April 2014, Flint officially began receiving its water from the Flint River. The water's negative impacts on human health emerged as the buildup of carcinogenic disinfectants and high levels of lead from corroded pipes began causing severe health problems for many residents. In light of these discoveries and residents’ concerns over the safety of their water, Flint eventually switched back to Detroit’s water system, but the damage was already done. On December 14, 2015, Flint declared a state of emergency, followed shortly by Genesee County on January 5, 2016.

In retrospect, it is clear that the local, state, and federal government mismanaged the water crisis in Flint, with a contributing factor in that failure being a breakdown in pre-crisis communication about the risks related to the water. Once a state of emergency was declared, the government began to take action and communicate the status of Flint’s water to the city's residents and surrounding communities. How effectively the risks surrounding the water were shared with the public from an instructional level is unclear.

I examine how some of the various stakeholders in this crisis, including the Environmental Protection Agency (EPA), U.S. Department of Health and Human Services, (USDHHS) Michigan governor’s office (MGO), Genesee County Health Department (GCHD), and the Flint mayor’s office (FMO), communicated instructional resources to the public to help mitigate the crisis and prevent further harm to residents’ health and safety. Drawing from instructional and crisis communication research, I use the IDEA model as a theoretical framework to assess how well these agencies used their website content to communicate health and safety risks surrounding the water and strategies to reduce those risks.

LITERATURE REVIEW

The literature on instructional crisis communication is extensive. Although instructional communication began in an educational or classroom context, it has since been extended to other disciplines, including communication, and across contexts, including health, risk, and crisis [1].

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Risk and crisis communication occur in a context of uncertainty. While risk communication is often more dialogic, when risk transforms to crisis, the need for more one-way instructional communication increases [1]. Instructional communication restores order during and after a crisis [2]. Instructional messages can increase audience knowledge and efficacy compared to non-instructional messages [3].

Message design is also important in determining the effectiveness of instructional communication during a crisis. Hazard, location, guidance, time, and source are important in developing an effective warning message [4]. More research is needed on how to develop effective instructional messages, particularly in the area of message structure and communication channels [5].

The IDEA model, developed by Sellnow and Sellnow [6], serves as a useful model for effective instructional communication during a crisis. The IDEA model “provides a framework for designing effective messages when the goal is to instruct nonscientific publics to take appropriate actions for self-protection during risk and crisis events” (p. 140) [7]. Stemming from John Dewey’s experiential learning theory, the IDEA model posits that learners need to understand and retain information, and that this is best accomplished through strategic message design. Specifically, messages should contain the following four elements: internalization, distribution, explanation, and action [8]. Multiple research studies support the IDEA model across various groups and types of risks and crises [7].

The first category in the model, internalization, involves personalizing the message content to the audience. The relevant question is: “How am I and those I care about affected (or potentially affected) and to what degree?” (p. 555) [9]. Strategies include emphasizing compassion, personal impact, proximity, timeliness, and exemplars [8]. The next category, distribution, is related more to the method of communication than its content, with the question being: “Which channel(s) will best reach my target audience?” (p. 70) [8]. Message accessibility and alignment are two key challenges [8]. The explanation category “focuses on answering question about what is happening and why, as well as what is being done to mitigate the risk situation and protect communities during a crisis event” (p. 73) [8]. The action category “focuses specifically on what people should/can do or not do for their own safety and well-being, as well as those they care about” (p. 74) [8]. The question is: “What specific actions should I and those I care about take (or not take) for self-protection?” (p. 556) [9]. Instructions should be clear, actionable, location specific, and include exemplars [8].

METHODS

I examine all website content regarding the Flint water crisis published by the U.S. Environmental Protection Agency (EPA.gov), U.S. Department of Health & Human Services (PHE.gov), Michigan governor’s office (Michigan.gov), Genesee County Health Department (GCHD.us), and the Flint mayor’s office (CityofFlint.com) between December 14, 2015, when the City of Flint declared a state of emergency, and April 6, 2018, when the Michigan Department of Environmental Quality announced that lead was at acceptable levels. Government agencies provided the majority of the instructional information during the crisis, and the government is generally considered a credible source during times of crisis. Examining content from federal, state, and local sources provides a broader perspective on the communications distributed by various types and levels of government.

I examine the content on these government agencies’ websites using directed qualitative content analysis, the goal of which is to “validate or extend conceptually a theoretical framework or theory” (p. 1281) [10]. In this case, I will attempt to validate and extend the IDEA model. Concepts based on the theoretical framework are used to form coding categories, for which operational definitions are then developed [10]. The website content from each source was coded according to the four categories posited by the IDEA model.

My coding process consists of reading each text line-by-line and coding each sentence that appears to correspond with the IDEA model categories. For videos and audio clips, a transcript was taken and coded at the sentence level. For visual and non-textual media, the entire piece was coded as a single instance (equivalent to a sentence). Content was also coded and recorded from a document level to provide multiple levels of comparison. Since the content examined was all distributed in one primary format, via each agency’s website, the distribution category was only coded from a document level. Each text, video, or other type of content that appeared on more than one agency’s website was coded as an example of distribution. Individual sentences were only coded for internalization, explanation, and action.

RESULTS

From both a document and sentence level, explanation and action were about equal. Almost every document contained examples of explanation and action. Almost one-fourth of the documents surveyed contained examples of internalization. Since distribution was coded differently than the other categories, by the whether the document was shared across other government agencies’ websites, the numbers for that category were lower. However, a substantial portion of the documents, almost one-fifth, were shared across multiple government sources. From a sentence level, explanation and action dominated, with those two categories almost evenly split and internalization making up the remaining 15%.

Looking at instances across government agencies, there were several noticeable trends. Across all three levels of government, explanation and action made up a similar percentage of documents, hovering around one-third for each. However, the proportion of internalization and distribution varied somewhat. For the two federal agencies, EPA and
USDHHS, there was almost an even number of explanation and action examples, each making up almost one-third of cases. Meanwhile, internalization and distribution each only made up about one-fifth of all cases. For both the state government (MGO) and the local government agencies (GCHD and FMO), internalization examples were slightly more frequent, hovering around one-fourth of all documents, and distribution was slightly less frequent, by about 2%. From a document level, the numbers were strikingly similar overall.

From an individual website level, the EPA contained a wide range of instructional communication, from flyers to videos, with a mix of each category, although it more heavily favored explanation and action. The USDHHS website contained a variety of instructional content as well, including documents, videos, and animated graphics. There was a mix of internalization, explanation, and action, although like the EPA, explanation and action were featured the most.

The MGO maintained a website during the crisis with content specific to Flint water issues, with some original content and other content shared from outside sources. Under the MGO, texts from three departments were coded as belonging to the office, which were all featured prominently due to the type of services they provide: the Michigan Department of Health and Human Services, Michigan Department of Agriculture & Rural Development, and the Michigan Department of Environmental Quality. The communications appearing on the Michigan.gov website contained a mix of internalization, explanation, and action. Like the two federal agencies examined, explanation and action were present more often than internalization.

The GCHD website contained mostly flyers and other documents with instructional communication regarding the Flint water crisis. The website contained a decent combination of internalization, explanation, and action, with a particular focus on explanation and action. The FMO website contained primarily original content and documents shared from other sources. Like the other agency websites, explanation and action were the most prominently featured, but there was a slightly higher percentage of internalization than with the other agencies from both a document and sentence level. Explanation also featured more prominently, making up half of the content from a sentence level. The city did not have as much original content as the other websites, and the other agencies did not include much of its content on their sites.

**DISCUSSION**

Examining the website content from some of the major government agencies involved with the Flint water crisis response efforts has yielded some interesting insights about the IDEA model, how different levels of government might respond to a crisis, and government instructional communications regarding crises in general. All five websites examined contained content that exhibited the various elements of the IDEA model. There was a clear trend favoring explanation, which seems supported by past research; however, a surprising result was that explanation and action were almost even in their occurrences, except for the USDHHS website, which contained more examples of action, and the FMO, which clearly favored explanation. Internalization was used less than explanation and action across the agencies’ websites, although the FMO website included a greater percentage of this type of content than the other websites. The closeness of the most local government to Flint might account for this result, as it may be easier or more necessary to personalize content for the city an agency is directly serving.

All the websites included distribution of content across other sources. Between agency partnerships to publish instructional documents and cross-sharing of content across websites, distribution was clearly an important element of governmental instructional communication during the Flint water crisis. The MGO and EPA website content was distributed widely, and the USDHHS shared much of their content on its website. This result may be explained by the fact that the USDHHS has many areas of focus and was not able to dedicate as much of its resources to publishing original content, so it instead relied on the quality content being produced by other agencies. Distribution of content across websites was also most varied for the FMO, as the city was less prone to generating its own content or sharing content from other government sources. This may be due in part to the more limited resources of local governments, especially compared to larger federal agencies like the EPA.

Although all the websites examined contained elements of the IDEA model, based on their overall adherence to the model, several preliminary conclusions can be drawn about their effectiveness as instructional communication. From a quantitative level, the federal agencies examined provided the best instructional response to the crisis. From a document level, the EPA and USDHHS websites contained the greatest combination of internalization, distribution, explanation, and action. From a qualitative level, the MGO had some of the most widely distributed, strongest examples of internalization, explanation, and action. The quality and quantity of samples from each website varied significantly. Although further research and assessment tools would be necessary to definitively determine which level of government or agency published the most effective instructional content, the results from this study support the IDEA model as a useful framework for examining instructional communication.

**CONCLUSION**

If there is a clear conclusion to be drawn from this study, it is that the instructional communications published by key government agencies during the height of the Flint water crisis were effective in conveying messages about health risks
facing residents in accordance with the IDEA model framework. This is in stark contrast to the pre-crisis communication failure that ultimately led to the crisis in the first place. If the government agencies involved in the crisis had used the IDEA model to develop instructional communications to the public as soon as the water issues were first identified, perhaps the crisis would have been less severe, and the appropriate actions would have been taken to minimize risk.

The study results suggest several practical applications for future instructional communication for health crises such as this one. Balancing explanation and action instead of favoring explanation the way that instructional crisis communication tends to do can help people better understand and respond to a crisis. The federal and state-level agencies examined did a particularly good job coupling explanation with action; modeling future instructional crisis communication on their examples may prove fruitful. Using second-person tense to help personalize content as a form of internalization is another useful tactic that the USDHHS and other websites used effectively and can potentially be used in other instructional crisis communication. Most of the agency websites examined shared instructional content from other agencies, which helped increase the distribution of the content and create consistent messaging across sources. Other agencies can adopt this strategy in their communications to align and spread messages to the public during a crisis.

Some observations from the study may provide avenues for future research. Multiple documents across the agencies’ websites, particularly the EPA, contained content in English as well as alternative options in Spanish, ASL, and Arabic, and even resources for those who have hearing and speech disabilities. A potential area of research might be how this type of audience inclusivity can enhance instructional communication and add to the distribution element of the IDEA model. Another future research area is how word choice works in conjunction with elements of the IDEA model to amplify the effect of internalization, distribution, explanation, and action. In many of the documents examined, certain types of sentences appeared to correspond with each type of appeal; for example, the documents using internalization often used the second-person tense and directly called out specific groups of individuals who might be most affected by the crisis. Examining how images are used in instructional documents opens another avenue of research. Some of the documents in this study contained useful visuals while other images served no clear instructional purpose. Assessing the impact of images coupled with text may provide insights for developing effective instructional communication.

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