TURNING CONCEPT INTO PRACTICE: PREPARING UNDERGRADUATE STUDENTS TO MANAGE CRISES UTILIZING A VIRTUAL TABLETOP EXERCISE

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ABSTRACT

Turning concepts into practice in an asynchronous online learning environment is a formidable undertaking. Adopting the *strategic crisis leadership model* to provide an organizing concept for a class called *Leading in Crisis*, a virtual tabletop exercise was developed so that students could apply the concepts in a basic exercise. Student surveys confirmed that the exercise was worthwhile and contributed to their learning.

Keywords: *crisis leadership, leadership development, emergency management, higher education, asynchronous classes, online instruction.*

INTRODUCTION

Throughout the 1980s, thirty-one natural disasters in the United States caused over a billion dollars in damage each. From 2020 to 2022, 60 billion+ natural disasters occurred (Smith, 2023). Numerous factors contribute to the increasing frequency and damage of these types of disasters. Recognizing that we live in an age of near-constant crises, former Department of Homeland Security official Juliette Kayyem titled her recent book *The Devil Never Sleeps*. Kayyem (2022) argues that in many cases, there is a key point where decisive and effective action may prevent a crisis from turning into a disaster.

Depending on jurisdictions and authorities, a leader—a public official such as an elected executive or an appointed emergency manager—bears the burden for such action. It is a tremendous responsibility with professional and emotional implications. It is difficult to prepare oneself for such undertakings (Marcus et al., 2021). There are various models of crisis leadership available to study, but a challenge for educators is how to turn leadership concepts into good practice.

Over the last decade, Immaculata University has educated emerging leaders in emergency management by offering a bachelor's degree in emergency planning and management. A fundamental course required for the major is *Leading in Crisis* (POL 354), which utilizes Boin et al.'s (2017) crisis management model, *strategic crisis leadership*. When the course was designed, a simulation was developed to allow students to apply the concepts they had learned,

including strategic crisis leadership. This paper offers a case study for turning concepts into effective practice for students majoring in emergency management. After learning the model, students apply what they have learned in a progressive virtual tabletop exercise (VTTX). This article examines the methods used to conduct a VTTX for an online, asynchronous class and shares student feedback.

IMMACULATA UNIVERSITY'S *LEADING IN CRISIS* COURSE

Accredited by the Middle States Commission on Higher Education, Immaculata University is a Roman Catholic liberal arts institution in the western suburbs of Philadelphia that offers undergraduate degrees in emergency management. The Bachelor of Science in Emergency Planning & Management (EPM) is a hybrid program with a track for nontraditional working adults and another for traditional students who are continuing their education right after high school. Over the last five years, 15–25 students enrolled in the program annually. Recognizing that plans are often insufficient to deal with emergencies, the program focuses on developing leadership skills, team leadership, and crisis leadership (Immaculata University, n.d.).

The *Leading in Crisis* course aims "to provide learners with a thorough understanding of the strategic, political, legal, and organizational challenges associated with leading in times of crisis" (Immaculata University, 2022, pp. 102–103). Because the emergency management program was initially designed for working adults, courses are typically offered online in an asynchronous, accelerated format with 5–20 students (traditional and nontraditional) in each section. These classes are seven weeks long, and each week is a distinct class session. The University uses Moodle as its learning management system (Immaculata University, 2023).

During the course, students examine a different disaster case study each week utilizing the frame from that week's readings and video lecture and then engage in two online discussions related to the week's theme (Schwartz, 2022). Throughout the course, they complete a third-party self-study course on crisis leadership, write short (500–750 word) focus papers on specific topics, and complete a research project on a leader who managed a particular crisis. The strategic crisis leadership model is introduced in the first class, and each challenge is examined in consecutive weeks; the final week of the class examines the entire model.

MODELS OF CRISIS LEADERSHIP

Even before the COVID-19 pandemic elevated interest in the topic, researchers found that despite the recognized importance of crisis leadership, the area has been understudied (Bundy et al., 2017; Balasubramanian & Fernandes, 2022). Consequently, the attributes that make a leader effective during a crisis remain uncertain, and various models proliferate. Many practitioners utilize a personal, descriptive approach based on anecdotes and personal reflections; others examine case study evidence to identify benchmarks.

In the broadest sense, crisis management occurs in three stages—before, during, and after the crisis—using internal and external perspectives. The former focuses on how effectively an organization operates during a crisis, while the latter focuses on the organization's interactions with external stakeholders, particularly the public (Bundy et al., 2017).

THE STRATEGIC CRISIS LEADERSHIP CONCEPT

In their book, *The Politics of Crisis Management: Public Leadership Under Pressure,* Boin et al.'s (2017) strategic crisis leadership model identified five critical tasks leaders in democratic systems must process to manage a crisis effectively: sense-making, decision-making and coordinating, meaning-making, accounting, and learning.

Sense-Making

Sense-making occurs before and at the start of a crisis. It is challenging to recognize an impending disaster in advance—the clues may be found within the organization responsible for preventing the crisis—but once it unfolds, it is easier to make sense of. The challenge then becomes keeping pace with a rapid and dynamic emergency and staying ahead of the rumors that will proliferate; having an effective response organization is essential.

Decision-Making

As a leader begins to make sense of an impending crisis, responding effectively requires good decision-making and implementation. This task again bridges the before and during stages of crisis management. The perspective is very much internal: crisis decision-makers must seek and get good advice from a crisis action team.

Meaning-Making

Once a crisis occurs, it can threaten the public's perception of safety, security, and normalcy, so the third challenge for leaders is meaning-making. This involves imposing a convincing narrative that reduces public uncertainty and creates confidence in the crisis leadership team. This is a complex challenge for leaders and their advisers, who may do everything the right way but still lose control of the public's understanding of the incident.

Accounting

Before a crisis is even over, members of the public and many politicians will start to look for who to blame for the incident, highlighting the importance of effectively terminating a crisis. This can be a dangerous period that tests the resilience of the governance systems, and effectively managing this challenge—ensuring that the public's desire for accountability is sated—can set the stage for a strong recovery. Nevertheless, every crisis is unique, and the

authors point out that there is no single best way to overcome this challenge, and even an effective crisis response may not protect an elected official from losing their office.

Learning

The final challenge is learning from the incident. Crises can expose vulnerabilities in systems, which should be addressed through reforms and new policies to prevent similar crises from happening again. Successful politicians do not let crises go to waste.

While the text is written for political leaders, the authors found that the concepts apply to anyone responsible for crisis leadership. At every level of government, the elected and the appointed leaders are considered the jurisdiction's senior officials (Federal Emergency Management Agency [FEMA], 2022), particularly during a crisis. The role of an emergency management professional may come with limited authority and tremendous responsibilities. One of those responsibilities is to provide the best advice possible to facilitate the effective decision-making of the responsible elected official. Considering these factors, the *Leading in Crisis* course adopted the text.

VIRTUAL TABLETOP EXERCISES

Having students develop a deep understanding of the crisis leadership model is important because it fulfills the course learning objectives and program learning outcomes and prepares them for the real-world challenges of their future profession. Therefore, to better prepare them for management roles, it was deemed necessary to facilitate learning—using Bloom's Taxonomy, which goes beyond the basic levels of learning: knowledge (remembering) and comprehension (understanding) (Athanassiou et al., 2003).

Tabletop exercises (TTX) are decision-making exercises frequently used in emergency management and reach the application level of the cognitive domain. The Federal Emergency Management Agency (n.d.) defines a TTX as

> A facilitated analysis of an emergency situation in an informal, stress-free environment. There is minimal attempt at simulation in a tabletop exercise ... Tabletops are designed to elicit constructive discussion as participants examine and resolve problems based on existing operational plans and identify where those plans need to be refined. The success of the exercise is largely determined by group participation in the identification of problem areas. (para. 3)

Since the COVID-19 pandemic, FEMA has mainly relied on virtual tabletop exercises (VTTXs), including the National Exercise Program, to bring together distant students and improve national preparedness. They have all been synchronous (FEMA, 2023). FEMA's (2021) *Virtual Exercise Best Practices* provides guidance for VTTXs. A TTX places students into roles where they - have to analyze a situation, formulate recommendations, and collaborate with their peers to develop a

plan of action as if they were an emergency action team member. The challenge for designing the *Leading in Crisis* course was incorporating a TTX into an asynchronous online class.

The seven-week structure of the class fits well with the strategic crisis leadership model. The model can be introduced in session one, each of the five challenges examined individually in sessions two through six, and the model summarized in the seventh and final session. With a TTX, each crisis leadership challenge can also be applied in a separate turn of the scenario, starting with sense-making in session three and completing the model with learning in week seven.

CREATING A VTTX FOR AN ONLINE ASYNCHRONOUS ENVIRONMENT

The limiting factor for creating the VTTX in an asynchronous class was creating an environment that would emulate a tabletop exercise. Ideally, students would individually consider the facts presented, develop a unique recommendation, and then collaborate asynchronously with their colleagues to develop a plan. Through experimentation, the discussion boards for each turn of the VTTX were set up as Q & A Forums in Moodle, which requires students to do an initial discussion post before being able to view other students' postings (Moodle, 2023). This requires students to develop an initial recommendation on their own without the benefit of seeing what other students recommended. After their first post, they can see all previous student posts and instructor feedback.

To meet the learning objectives of having students apply their knowledge of the strategic crisis leadership model, it was necessary to use a realistic scenario to allow them to progress through each challenge incrementally. A case study by Howitt and Leonard (2009) proved an ideal scenario: the Howard Street Tunnel fire in Baltimore in July 2001. In the incident, a 60-car freight train carrying hazardous materials derailed and caught fire in the middle of the 1.5-mile tunnel under downtown Baltimore. The brick-lined tunnel became super-heated like an oven, and there was great concern about the harmful effects of the smoke that billowed out of each end of the tunnel. The fire burned for six days. Fortunately, there were no fatalities or serious injuries.

As described in the case study, the response effort involved the mayor, the fire chief, and other city officials and was ultimately successful, although not without mishaps (Howitt & Leonard, 2009). In the scenario, every student is assigned the role of strategic adviser to the mayor. Students are initially given an overview of the scenario and exercise, and directions are given to students at the beginning of each of the five turns of the VTTX as if they were receiving instructions from the mayor. To ensure that students do not read ahead to gain insights on the outcome of the current week's turn, future activities are hidden from students. Table 1 broadly shows the course schedule with a specific concept taught one week and then applied in the VTTX the following week. The scenario builds and student tasks for each week are also shown.

Table 1. Class Schedule with VTTX

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6	Session 7
Class Focus	Introduction	Sense Making	Decision Making	Meaning Making	Crisis Termination & Accounting	Learning from Crisis	Essential Role of Leaders
Concept Focus	Overview of Model						Prudent Leadership
VTTX Concept Focus			Turn 1: Sense Making	Turn 2: Decision Making	Turn 3: Meaning Making	Turn 4: Accounting	Turn 5: Learning
VTTX Event		Exercise Overview	Train derailment & fire	HAZMAT & evacuation decisions	Informing the public	Crisis termination	Learning from crisis
Student Task			List of essential elements of information	Recommend evacuation or shelter in place	Draft mayor's statement for press	Create a list of conditions for ending the emergency	Plan for AAR

In each week's initial post, students are expected to provide advice or develop a product (e.g., a recommendation on whether to evacuate an apartment building or have the residents shelter in place) and provide a rationale to support their proposal. Once completed (no later than day 4), they can see what others have posted and are encouraged to provide feedback on their classmates' recommendations while also starting to collaborate with them on a group recommendation (due by day 7). Students are graded on their critical thinking and effort during the turn, particularly how they collaborated with their peers on a recommendation for the mayor. Since the mayor ultimately makes the decisions, each new turn begins with a summary of what was decided in the event—which may or may not be similar to what the group recommended— and a new challenge.

FACILITATING APPLICATION THROUGH PRACTICE

The structure of the course facilitates student level through the first three levels of Bloom's *Taxonomy of Learning* for the cognitive domain: Remember, Understand, and Apply using Krathwohl's (2002) revised taxonomy which considers the intersection of the cognitive process with a knowledge dimension, the learning outcome is aptly named: provide advice.
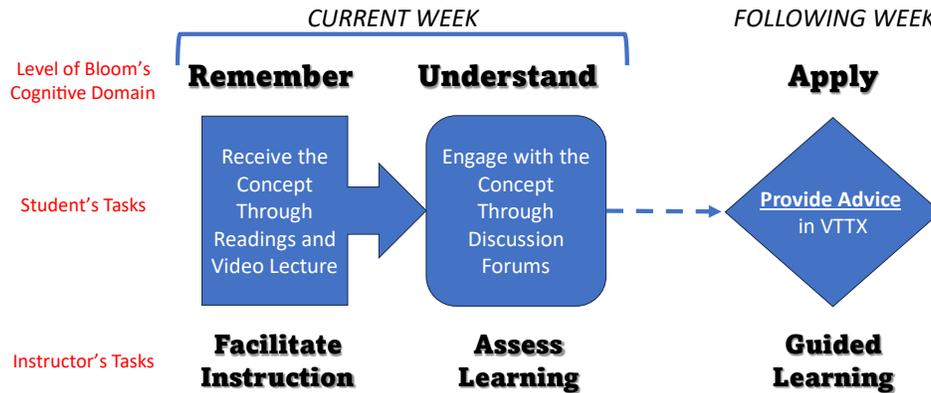
Figure 1. The Learning Process

Figure 1 shows how students learn about the strategic crisis leadership model by receiving instruction on and discussing a concept in one week and applying it in the VTTX in the next week. As with any online education, instructor involvement and feedback are critical to student learning (Getzlaf et al., 2009), and perhaps more so for this VTTX activity because students are not merely demonstrating that they have retained the concept. They have to apply it in a challenging, albeit forgiving, environment. Throughout each turn of the VTTX, the instructor guides the learning to ensure that students understand how to apply the concepts in the future.

STUDENT FEEDBACK ON THE VTTX

Students at Immaculata provide feedback on instruction and instructors at the end of every class. While this information helps instructors manage classes, as a general survey, it is not explicitly focused on the effectiveness of activities, such as a VTTX for teaching crisis leadership. Therefore, in June 2023, approximately 50 current and former students who had completed the *Leading in Crisis* class were emailed a link to a short survey to determine their perceptions of the efficacy of the Strategic crisis leadership model and the VTTX.

Ten current and former students (20%) responded, acknowledging that they had completed the *Leadership Crisis* course; they recalled participating in the VTTX and studying the strategic crisis leadership model. When asked how they evaluated the VTTX, all of their responses were positive, with 60% ($n = 6$) choosing that it was an excellent exercise. Eight respondents (80%) thought that the VTTX helped them better understand and apply the strategic crisis leadership model to a great or moderate degree. Asked to select the elements that they liked best about the VTTX, the responses were the following:

- 100% ($n = 10$) – It helped me better understand the challenges of leading during a crisis.
- 90% ($n = 9$) – It was challenging.
- 80% ($n = 8$) – The instructor's feedback and dialogue with other students was good.
- 60% ($n = 6$) – It was realistic.

Four respondents added comments, and one provided particularly constructive feedback regarding the format of Moodle's Q & A Forum, which is different from a standard discussion post:

> I thought the tabletop exercise was excellent. It gave me a different perspective in dealing with an emergency than my previous career. The only daunting part was the thread of responses. It was difficult to follow up on thoughts, ideas, and procedures others posted if they did not directly reply to a specific comment.

Despite the good response rate (20%), the survey's small sample size (n=10) does not make the outcomes statistically significant or conclusive. However, it does indicate that there are positive outcomes associated with the course's pedagogy.

CONCLUSION

Through an examination of the development and implementation of an undergraduate course on crisis leadership, this paper offers a case study of how a concept—like the strategic crisis leadership model—can be applied through practice even in an asynchronous online learning environment. The virtual tabletop exercise (VTTX) developed for the class allowed students to apply the concepts in a basic exercise. Former and current students who responded to a survey confirmed that the VTTX activity was worthwhile and contributed to their learning.

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