

TEACHING CASES: A PEDAGOGICAL ARTICLE FOR PROMOTING RIGOROUS ETHICS TEACHING WITH CASES

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ABSTRACT

Teaching with cases is an important aspect of emergency management and homeland security (EMHS) education. This method illuminates the content and practices of leading during crises. Using cases in teaching ethical decision-making supports complex discussions within the safety of a learning space. This article introduces a standard framework for a pedagogical methodology, a *teaching case*, to support the use of cases in EMHS ethics education. Teaching cases emphasize instructional activities for student learning, while case studies analytically examine a case to develop scholarly knowledge. A teaching case standard framework promotes the efficacy and rigorous use of cases in learning spaces to advance high-quality EMHS education.

Keywords: *emergency management, homeland security, education, problem-based learning, case-based learning, teaching case, pedagogical article*

A *teaching case* is a pedagogical approach that emphasizes instructional practices based on key themes and professional standards, drawing on a rich case narrative for students to apply their learning (Tikhomirov, 2025). Teaching cases may be based on a real, composite, or hypothetical context and narrative, in conjunction with applied scholarly literature that connects to the case's themes (Malatesta & Siena, 2024). The purpose of a teaching case is to illuminate the instructional moves and activities educators can take to engage students throughout the learning experience (Reed, 2023). The impetus for publishing and disseminating teaching cases is to support the teaching of ethics in emergency management and homeland security (EMHS) education. Like ethics in practice, teaching ethics and ethical thinking are particularly challenging aspects of professional education due to the abstract, nuanced, and gray nature of ethics (Adams et al., 2025).

A teaching case may be based on a case study analysis, where the emphasis shifts to how teachers can utilize that case within the context of a learning experience (see Appendix A). However, teaching cases differ from case studies because a teaching case is not an empirical study analyzing a particular case (Yin, 2017; Yazan, 2015). Case studies examine “a person, an organization, an event, a decision, an action, a location like a neighborhood, or a nation-state”

(Schwandt & Gates, 2017, p. 600) to develop scholarly knowledge either about that specific case (Stake, 1995) or to generalize beyond (Gerring, 2004). While case studies advance knowledge, teaching cases are intended for use by EMHS educators in learning spaces and with students directly to engage in difficult conversations.

This article aims to enhance the pedagogical efficacy of cases in classrooms and other educational settings within the EMHS field. This article and Adams (2025) were conceived to promote teaching the code of ethics developed by the FEMA Ethics Special Interest Group (SIG) (Smith & Feldmann-Jensen, 2024). This article proposes a pedagogical approach, known as a *teaching case*, to facilitate high-quality ethical education through the use of cases in EMHS teaching.

Teaching with cases is an essential aspect of EMHS education (Feldmann-Jensen et al., 2024; Kushma & Slick, 2023; Slick, 2019). Cases and case studies are helpful in EMHS teaching as they emphasize the field's content and practices. Moreover, using cases in teaching can involve important ethical issues (Lavi & Marti, 2023; Mathur & Corley, 2014; Marshall, 2014), and teaching cases can facilitate ethical decision-making within the safety of a classroom space (Adams et al., 2025). Teaching cases offer a safe educational opportunity for future EMHS professionals to develop practices and skills, such as crisis communication.

Slick (2019) found that cases simultaneously address various learning outcomes, such as teaching about a particular case, learning about a specific disaster and emergency management concept, or exploring an EMHS practice. Cases apprentice EMHS students to the field's cultural knowledge concurrently with shared practices, serving as a reflective body of knowledge for those students to draw on in their future work. Slick (2019) developed a framework for how educators use cases in EMHS education. First, educators use cases to help students build knowledge about a particular case. In other words, a crucial aspect of using a case is to be specifically familiar with the event details. Second, educators use cases as tools: either as a concrete example of an abstract concept or to demonstrate the actions and processes of EMHS work. The framework is not mutually exclusive. EMHS educators may use a case in their teaching in a way that allows all three uses to co-occur. This article extends Slick's framework of teaching with cases to propose a type of scholarly pedagogical approach that foregrounds the instructional aspects of using a case in a classroom.

Teaching cases are grounded in problem- and case-based learning theories. Both problem and case-based learning center students' application of learning rather than strictly teaching for knowledge acquisition (Allchin, 2013; Feletti, 1995; Kolodner, 1993; Pinto, 2023). These experiences are specifically designed to apply learning, such as by critiquing a case or solving a problem, thereby increasing the transferability of learning to future situations (National Research Council, 2012). Both problem- and case-based learning draw on cognitive and socio-cultural approaches to learning by situating students' cognition or knowledge within their personal experiences as they connect to and unpack the case at hand (Kolodner, 1993).

Case- and problem-based learning have a strong foundation in medicine, disaster and emergency medicine, engineering, and science (Feletti, 1995; Kolodner et al., 2003; Martin et al., 2021; Schmidt et al., 2011). Teaching cases are a practical learning experience (Aluisio et al., 2016; McLean, 2016; Raza et al., 2020). Beyond increasing field-specific conceptual knowledge (Kulak et al., 2017; Strobel & van Barneveld, 2009), case- and problem-based learning also have effects on students' soft skills, including collaboration (Saldo & Walag, 2020), motivation (Raza et al., 2020; Wijnia et al., 2024), critical thinking (Harman et al., 2015), reflection (Hemphill et al., 2015), and moral decision-making (Huschle, 2012). Furthermore, online case-based learning can be just as effective as in-person or face-to-face environments (Nicklen et al., 2016).

WHAT MAKES A GOOD TEACHING CASE? A TEACHING CASE ARTICLE FRAMEWORK

Frameworks across various disciplines, including safety education (Bocwinski et al., 2021), business management (Sims & Sims, 1991), medicine (Corey et al., 2024), engineering (Walling, 2015), and educational leadership (Classen & Modeste, 2025), provide guidance on teaching cases and supporting EMHS students to develop ethical problem-solving capabilities (Kim et al., 2006). Rigorous teaching cases encompass community context and demographics, narrative, applied scholarly literature, and teaching notes, which include alignment to standards, discussion questions, and learning activities. The importance of each section is discussed along with recommended considerations for authors. Lastly, Appendix A presents a hypothetical case of a dilemma associated with mitigation funding, serving as a concise example of the effective development of ethics teaching cases.

Community Context and Demographics

Two initial questions give a teaching case some context: *What do readers need to know about the community? Who are the key players of the narrative?* But why does context matter? O'Fallon and Butterfield (2005) reviewed several studies on ethics in business and highlighted a consistent trend: multiple cultural factors add context to and significantly influence the ethical decision-making process. These studies consistently demonstrated that culture, demographics, and values are crucial in shaping ethical choices in business environments.

An ethics teaching case can best model a real-world scenario by providing the context that would affect a real decision. Understanding the community context is especially important in the public service domain, particularly in diverse or historically marginalized communities. Understanding the language, ethics, history, and enduring values of cultures can aid in improving access to effective communications (Knox & Haupt, 2020). Cases give insight into how the normative influence of everyday assumptions and declarations stand up in a contextualized situation (O'Mathúna & Iphofen, 2022). Adding details about the community enables students to consider whether any assumptions are harmful or helpful in achieving performance goals, such as fairness and equity. The context can include local, state, or federal laws; cultural and worldview

perspectives; local customs and values; historical context; institutional trust; and existing social dynamics.

Lastly, the inclusion of contextually rich details about the community and demographics is supported by the literature on case-based learning (Kolodner et al., 2005; Tawfik & Kolodner, 2016; Rong & Choi, 2019). Because the goal of teaching cases is to provide a medium for students to apply learning to new situations, thoroughly examining a community, its history, and socio-political dynamics allows for a critical analysis of typical practices and their impact on multi-dimensional people. Rather than applying EMHS conceptual knowledge indiscriminately, a rich community context promotes empathetic decision-making.

Narratives

Narratives tell the story of a dilemma or problem at hand. For example, an ethics narrative can juxtapose readers' values and morals with legal or financial constraints. In developing the narrative, clearly articulating the dilemma is essential for readers. A narrative helps to communicate the role of the decision-maker or the types of decisions they must make, and often describes the situation as ending in an unresolved manner. Narratives require structure to ensure reflection and engagement are maintained as necessary outcomes (Becker & Renger, 2017). Reviewing the potential motivations of the leading actors, current decision-making processes, and existing measures helps readers unpack the sequence of events leading to the central problem and propose realistic responses or solutions.

A teaching case's narrative and community context/demographics sections bolster each other. A narrative presents a rich and complex episode that unpacks the successes, failures, and surprises of the key players, in conversation with gray or unresolved issues. Without the community context, the sequence of events of a situation exists within a vacuum and is susceptible to normative assumptions and uncritical decision-making. Likewise, a community context without a narrative omits the sequence of events necessary to determine why or how a problem arose.

Applied Scholarly Literature and Theory

The applied scholarly literature section orients EMHS educators and students to the available scholarship and theory on the narrative's key themes. Scholarly literature examines existing theories, solutions, and tools for the case's dilemma by drawing from journal articles, white papers, gray literature, and even local statutes. Teaching case developers should consider resources that provide frameworks, domain-specific knowledge, or examples of strong decision-making.

For writers of teaching cases, the applied scholarly literature section should reflect a broad range of perspectives and provide a voice for historically marginalized communities. The example in Appendix A presents research that highlights both the benefits and drawbacks of a buyout

program, enabling readers to form their judgments and consider how their values and ethics align with the realities of the situation. As Slick's (2019) framework suggests, EMHS educators frequently utilize cases to teach concepts and practices. The applied scholarly literature section of a teaching case positions the case's key themes within the current body of knowledge and standard practices recommended for EMHS professionals. Furthermore, for EMHS educators with their own experiences and backgrounds, the applied scholarly literature section provides a starting point for further investigation into specific topics. Lastly, for more self-directed learners, the applied scholarly literature section empowers students to engage in a thorough dialogue across the community context, narrative, and current body of knowledge.

Teaching Notes

The teaching notes section of a teaching case article is similar to a teacher's edition of textbooks, more commonly found in K–12 education than in higher education. Both the teacher's edition and the teaching notes section provide suggestions and guidance for how to incorporate the narrative and applied scholarly literature into a classroom or training space. This section is important because it is not uncommon for EMHS educators to have little to no pedagogical training before starting teaching. As such, the teaching notes section is a vital aspect of a teaching case article for supporting and advancing the use of cases.

This section guides educators on how the case and applied scholarly literature relate to professional standards. The standards provide guidance on where a case can be used in a program of study and evidence of how a teaching case ensures a rigorous learning experience. The teaching notes offer potential discussion questions that can be used to explore and examine the narrative's themes from various angles. Discussion questions can be easily integrated into online courses and courses with limited time, where a case may only be used within a single class meeting. Longer, more intense activities offer further opportunities to not only examine the case but also provide students with the chance to analyze, evaluate, and create professional materials that can be applied in their current and future fields.

Alignment to Standards

Teaching case developers should consider how the case and key themes align with curriculum and professional standards such as *The Code of Ethics for Emergency Management Professionals* (Smith & Feldmann-Jensen, 2024) and *Next Generation Core Competencies* (Feldmann-Jensen et al., 2019). As these standards have identified the desired outcome of an educational program (i.e., competent and ethical emergency management professionals), using them as guidance for learning objectives bolsters the importance of a lesson and teaching case. Indeed, identifying connections with these standards provides teachers with direction in determining where a case should be applied in a course. Connections to standards, furthermore, promote consistency and cohesion across an entire EMHS program or between programs altogether. Educational standards are the instructional end goal of students' academic courses. Learning objectives are smaller units of alignment that steer student development toward reaching the final standards. Objectives offer another way to identify what students are expected to know or be able to do after engaging

with a particular teaching case. For example, learning objectives may lean on various educational taxonomies (e.g., Bloom's taxonomy) to clearly define expectations for student learning.

Writers of teaching cases should also consider developing *essential questions* (Wiggins & McTighe, 2005) to help support the learning objectives. Essential questions are open-ended questions that stimulate thought and provoke inquiry throughout the curriculum, in contrast to those that have easy answers. Open-endedness allows the instructor to revisit the questions as more topics are covered, gauging the students' attitudes and views as they learn. Together, situating a case within specific standards and the expectations of student learning provides EMHS educators with directions for instructional coherence and fidelity. Indeed, without adequate guidance on the instructional purpose of a teaching case, educators are more likely to misinterpret its design, thereby undermining the effectiveness of the learning experience (Odell et al., 2019).

Discussion Questions

Because educational standards and learning objectives are often broad and wide-reaching, discussion questions provide an initial starting point for educators and students. Discussion questions structure students' conversations and help them to unpack the case, literature, and standards. These questions can prompt critical reflection and ethical considerations that are not initially apparent. Educators can use these questions to facilitate small group discussions in classrooms (Bonney, 2015) or to help focus students' attention on the key features of the case and the primary dilemma (Williams, 1992). Additionally, discussion questions can prompt students to consider unexpected viewpoints or "what if" alternatives to the original narrative that might not have initially been considered.

Questions such as *What are some underlying assumptions? What are alternative responses?* and *How could the scenario or response have been better/worse?* provide starting points for exploring the key aspects of the case. Moreover, discussion questions can spark deeper student-centered discussions in ways that allow students to collaboratively build knowledge around the teaching case (Saldo & Walag, 2020; Scardamalia & Bereiter, 2021). For example, if a teaching case's dilemma involves negotiating competing claims or decisions, discussion questions can prompt students to identify common goals that can resolve the dispute.

Activities

Activities enhance the case's experiential learning. Teaching cases can layer several learning experiences through the development of learning communities, peer-to-peer learning, and post-activity reflection. Moreover, collaborative learning activities that develop shared resources and artifacts further enhance the efficacy of the teaching case (Scardamalia & Bereiter, 2021). The following are a few activities that can be used to unpack a case, literature, and standards.

- Write up emergency operating procedures: Have students make considerations or annexes for specific populations such as the LGBTQ+ community, unhoused minors, Native or Indigenous populations, or the hard of hearing.

- Role-playing at a stakeholder meeting: Have students take on personas and roles that align with or diverge from their personal beliefs for critical reflection.
- Map of local response organizations: Have students create a network or map of the different response agencies and private organizations involved in response efforts for a disaster.

Activities also allow students to practice or create resources for their current or future jobs. Additionally, providing adaptations and accommodations ensures activities are inclusive for international students, multilingual or English-learning students, vulnerable populations, students at risk, or students with disabilities. With more EMHS education programs offering online or hybrid modalities, teaching cases should guide online-directed activities or suggest modifications for online settings. This may involve creating digital resources, adjusting to asynchronous classes, or organizing small groups within an online conference tool like Zoom.

CONCLUSION

EMHS classrooms and other learning spaces utilize cases as an important teaching tool. EMHS educators use cases to help students learn about the details of specific cases. Moreover, cases are also used to provide concrete demonstrations of abstract concepts and practices in the EMHS field. Advancing the scholarship of teaching and learning in EMHS education requires attention to promoting and disseminating high-quality teaching cases that support both novice and experienced educators. This advancement is crucial for teaching the complex topics of ethics and ethical reasoning.

This article presents a framework for teaching case articles that are contextually centered and explicitly outline the standards and learning outcomes for EMHS educators. Teaching cases are pedagogical articles for exploring ethically complex, gray, and problematic areas of practice. Teaching cases are not case studies because, rather than an empirical analysis, the core of a teaching case is the pedagogical support for teaching with a real, composite, or hypothetical case in EMHS education. In this way, teaching cases provide recommendations for ensuring that standards and learning outcomes are being met. Clearly articulating instructional goals and activities supports all EMHS educators who use teaching cases in their classrooms.

The growing professionalization of the EMHS field necessitates the creation of a database for such case articles, similar to those in other professional fields (e.g., engineering [National Society of Professional Engineers, n.d.; University of Waterloo, n.d.]). Thus, the Ethics SIG aims to establish a teaching case database featuring cases of ethical significance (Adams et al., 2025). This database of ethics teaching cases will not only support teaching ethics in the field but also provide a necessary foundation for high-quality instruction in EMHS education. The FEMA Ethics SIG plans to continue its mission to promote the teaching of ethics in EMHS education by developing an aggregated database of teaching cases for use in EMHS education spaces worldwide.

REFERENCES

- Adams, A., Feldmann-Jensen, S., & Smith, S. M. (2025). Teaching the code of ethics to advance emergency management practices. *Journal of Security, Intelligence, and Resilience Education*, 19(1).
- Allchin, D. (2013). Problem-and case-based learning in science: An introduction to distinctions, values, and outcomes. *CBE—Life Sciences Education*, 12(3), 364–372. <https://doi.org/10.1187/cbe.12-11-0190>
- Aluisio, A. R., Daniel, P., Grock, A., Freedman, J., Singh, A., Papanagnou, D., & Arquilla, B. (2016). Case-based learning outperformed simulation exercises in disaster preparedness education among nursing trainees in India: A randomized controlled trial. *Prehospital and Disaster Medicine*, 31(5), 516–523. <https://doi.org/10.1017/S1049023X16000789>
- Becker, K. L., & Renger, R. (2017). Suggested guidelines for writing reflective case narratives: Structure and indicators. *American Journal of Evaluation*, 38(1), 138–150. <https://doi.org/10.1177/1098214016664025>
- Binder, S. B., Greer, A., & Zavar, E. (2020). Home buyouts: A tool for mitigation or recovery? *Disaster Prevention and Management*, 29(4), 497–510. <https://doi.org/10.1108/DPM-09-2019-0298>
- Bocwinski, R., Finster, D. C., & Weizman, H. (2021). Framework for teaching safety case studies using a risk management approach. *Journal of Chemical Education*, 98(12), 3824–3830. <https://doi.org/10.1021/acs.jchemed.1c00625>
- Bonney, K. M. (2015). Case study teaching method improves student performance and perceptions of learning gains. *Journal of Microbiology & Biology Education*, 16(1), 21–28. <https://doi.org/10.1128/jmbe.v16i1.846>
- Classen, J., & Modeste, M. E. (2025). Unmasking the “threat” at Central Ridge High School: A case study of school swatting incidents, false emergencies, and educational leadership responses. *Journal of Cases in Educational Leadership*, 0(0). <https://doi.org/10.1177/15554589241312175>
- Corey, G., Corey, M. S., & Corey, C. (2024). *Issues and ethics in the helping professions* (11th ed.). CENGAGE Learning Custom Publishing.
- Disaster Mitigation Act of 2000, Pub. L. No. 106–390, 114 Stat. 1552 (2000).
- Engelman, A., Ivey, S. L., Tseng, W., Dahrouge, D., Brune, J., & Neuhauser, L. (2013). Responding to the deaf in disasters: Establishing the need for systematic training for state-level emergency management agencies and community organizations. *BMC Health Services Research*, 13(84), 1–10. <https://doi.org/10.1186/1472-6963-13-84>

- Feldmann-Jensen, S., Jensen, S. J., Smith, S. M., & Vigneaux, G. (2019). The next generation core competencies for emergency management. *Journal of Emergency Management*, 17(1), 17–25. <https://doi.org/10.5055/jem.2019.0393>
- Feldmann-Jensen, S., Jensen, S. J., & Slick, J. (Eds.) (2024) *Case studies in disaster response: A volume in disaster and emergency management: Case studies in adaptation and innovation*. Butterworth-Heinemann. <https://doi.org/10.1016/C2015-0-06294-3>
- Feletti, G. (1995). The disaster simulation: A problem-based learning or assessment experience for primary care professionals. *Medical Teacher*, 17(1), 39–45. <https://doi.org/10.3109/01421599509008287>
- Gerring, J. (2004). What is a case study and what is it good for? *American Political Review*, 98, 341–354. <https://doi.org/10.1017/S0003055404001182>
- Harman, T., Bertrand, B., Greer, A., Pettus, A., Jennings, J., Wall-Bassett, E., & Babatunde, O. T. (2015). Case-based learning facilitates critical thinking in undergraduate nutrition education: Students describe the big picture. *Journal of the Academy of Nutrition and Dietetics*, 115(3), 378–388. <https://doi.org/10.1016/j.jand.2014.09.003>
- Hemphill, M. A., R Richards, K. A., Gaudreault, K. L., & Templin, T. J. (2015). Pre-service teacher perspectives of case-based learning in physical education teacher education. *European Physical Education Review*, 21(4), 432–450. <https://doi.org/10.1177/1356336X15579402>
- Hotard, A. E., & Ross, A. D. (2023). Home buyout without relocation: An examination of dissonant hazard mitigation perceptions among Gulf Coast residents. *Risk, Hazards & Crisis in Public Policy*, 1–25. <https://doi.org/10.1002/rhc3.12284>
- Huschle, B. J. (2012). Learner outcome attainment in teaching applied ethics versus case methodology. *Teaching Philosophy*, 35(3), 243–262. <https://doi.org/10.5840/teachphil201235327>
- Jerolleman, A., Marino, E., Jessee, N., Koslov, L., Comardelle, C., Villarreal, M., de Vries, D., & Manda, S. (2024). Flood buyout relocations and community action. In A. Jerolleman, E. Marino, N. Jessee, L. Koslov, C. Comardelle, M. Villarreal, D. de Vries, & S. Manda (Eds.), *People or property: Legal contradictions, climate resettlement, and the view from shifting ground* (pp. 65–90). Springer International Publishing. https://doi.org/10.1007/978-3-031-36872-1_4
- Kim, S., Phillips, W. R., Pinsky, L., Brock, D., Phillips, K., & Keary, J. (2006). A conceptual framework for developing teaching cases: A review and synthesis of the literature across disciplines. *Medical Education*, 40(9), 867–876. <https://doi.org/10.1111/j.1365-2929.2006.02544.x>

- Knox, C. C., & Haupt, B. (Eds.). (2020). *Cultural competency for emergency and crisis management*. Routledge. <https://doi.org/10.4324/9780367321888>
- Kolodner, J. (1993). *Case-based reasoning*. Morgan Kaufmann.
- Kolodner, J. L., Camp, P. J., Crismond, D., Fasse, B., Gray, J., Holbrook, J., Puntambekar, S., & Ryan, M. (2003). Problem-based learning meets case-based reasoning in the middle-school science classroom: Putting learning by design(tm) into practice. *Journal of the Learning Sciences*, 12(4), 495–547. https://doi.org/10.1207/S15327809JLS1204_2
- Kolodner, J. L., Cox, M. T., & González-Calero, P. A. (2005). Case-based reasoning-inspired approaches to education. *The Knowledge Engineering Review*, 20(3), 299–303. <https://doi.org/10.1017/S0269888906000634>
- Kulak, V., Newton, G., & Sharma, R. (2017). Does the use of case-based learning impact the retention of key concepts in undergraduate biochemistry? *International Journal of Higher Education*, 6(2), 110–120. <http://dx.doi.org/10.5430/ijhe.v6n2p110>
- Kushma, J., & Slick, J. (Eds.) (2023). *Case studies in disaster recovery: A volume in the disaster and emergency management: Case studies in adaptation and innovation series*. Butterworth-Heinemann. <https://doi.org/10.1016/C2015-0-06295-5>
- Lavi, R., & Marti, D. (2023). A proposed case-based learning framework for fostering undergraduate engineering students' creative and critical thinking. *Journal of Science Education and Technology*, 32(6), 898–911. <http://dx.doi.org/10.1007/s10956-022-10017-w>
- Malatesta, D., & Siena, S. (2024). Observation and reporting: A teaching case on implicit bias and decision fallacies. *Journal of Public Affairs Education*, 1–17. <https://doi.org/10.1080/15236803.2024.2389756>
- Marshall, P. A. (2014). Integrating ethics into case study assignments. *Journal of Microbiology & Biology Education*, 15(2), 235–237. <https://doi.org/10.1128/jmbe.v15i2.740>
- Martin, D. A., Conlon, E., & Bowe, B. (2021). Using case studies in engineering ethics education: the case for immersive scenarios through stakeholder engagement and real-life data. *Australasian Journal of Engineering Education*, 26(1), 47–63. <https://doi.org/10.1080/22054952.2021.1914297>
- Mathur, S. R., & Corley, K. M. (2014). Bringing ethics into the classroom: Making a case for frameworks, multiple perspectives and narrative sharing. *International Education Studies*, 7(9), 136–147. <https://doi.org/10.5539/ies.v7n9p136>
- McLean, S. F. (2016). Case-based learning and its application in medical and health-care fields: A review of worldwide literature. *Journal of Medical Education and Curricular Development*, 3. <https://doi.org/10.4137/JMECD.S20377>

- National Institute of Building Sciences. (2019). *Natural hazard mitigation saves*.
https://www.nibs.org/wp-content/uploads/2025/04/NIBS_MMC_MitigationSaves_2019.pdf
- National Research Council. (2012). *Education for life and work: Developing transferable knowledge and skills in the 21st century*. The National Academies Press.
<https://doi.org/10.17226/13398>.
- National Society of Professional Engineers. (n.d.). *Board of Ethical Review cases*.
<https://www.nspe.org/resources/ethics/ethics-resources/board-ethical-review-cases>
- Nelson, K. S., & Camp, J. (2020). Quantifying the benefits of home buyouts for mitigating flood damages. *Anthropocene*, 31, 100246. <https://doi.org/10.1016/j.ancene.2020.100246>
- Neuhauser, L., Ivey, S. L., Huang, D., Engelman, A., Tseng, W., Dahrouge, D., Gurung, S., & Kealey, M. (2013). Availability and readability of emergency preparedness materials for deaf and hard-of-hearing and older adult populations: Issues and assessments. *PLOS One*, 8(2), e55614. <https://doi.org/10.1371/journal.pone.0055614>
- Nicklen, P., Keating, J. L., Paynter, S., Storr, M., & Maloney, S. (2016). Remote-online case-based learning: A comparison of remote-online and face-to-face, case-based learning-a randomized controlled trial. *Education for Health*, 29(3), 195–202.
<https://doi.org/10.4103/1357-6283.204213>
- O’Fallon, M. J., & Butterfield, K. D. (2005). A review of the empirical ethical decision-making literature: 1996-2003. *Journal of Business Ethics*, 59(4): 375–413.
<https://doi.org/10.1007/s10551-005-2929-7>
- O’Mathúna, D., & Iphofen, R. (2022). Making a case for the case: An introduction. In D. O’Mathúna & R. Iphofen (Eds.), *Ethics, integrity and policymaking: The value of the case study* (pp. 1–12). Springer International Publishing.
- Odell, M. R., Kennedy, T. J. , & Stocks, E. (2019). The impact of PBL as a STEM school reform model. *Interdisciplinary Journal of Problem-Based Learning*, 13(2).
<https://doi.org/10.7771/1541-5015.1846>
- Pinto, B. L. (2023). Distinguishing between case based and problem based learning. *International Journal of Kinesiology in Higher Education*, 7(3), 246–256.
<https://doi.org/10.1080/24711616.2022.2111286>
- Raza, S. A., Qazi, W., & Umer, B. (2020). Examining the impact of case-based learning on student engagement, learning motivation and learning performance among university students. *Journal of Applied Research in Higher Education*, 12(3), 517–533.
<http://dx.doi.org/10.1108/JARHE-05-2019-0105>

- Reed, D. S. (2023). Independent demonstration projects: A teaching case on innovation. *Journal of Public Affairs Education*, 29(2), 232–244. <https://doi.org/10.1080/15236803.2023.2188150>
- Rong, H., & Choi, I. (2019). Integrating failure in case-based learning: A conceptual framework for failure classification and its instructional implications. *Educational Technology Research and Development*, 67(3), 617–637. <https://doi.org/10.1007/s11423-018-9629-3>
- Saldo, I. J. P., & Walag, A. M. P. (2020). Utilizing problem-based and project-based learning in developing students' communication and collaboration skills in physics. *American Journal of Educational Research*, 8(5), 232–237. <https://doi.org/10.12691/education-8-5-1>
- Scardamalia, M., & Bereiter, C. (2021). Knowledge building: Advancing the state of community knowledge. In U. Cress, C. Rosé, A. F. Wise, J. Oshima (Eds.) *International handbook of computer-supported collaborative learning*. Springer. http://dx.doi.org/10.1007/978-3-030-65291-3_14
- Schmidt, H. G., Rotgans, J. I., & Yew, E. H. (2011). The process of problem-based learning: What works and why. *Medical Education*, 45(8), 792–806. <https://doi.org/10.1111/j.1365-2923.2011.04035.x>
- Schwandt T. A., & Gates E. F. (2017). Case study methodology. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 341–358). Sage.
- Sims, R. R., & Sims, S. J. (1991). Increasing applied business ethics courses in business school curricula. *Journal of Business Ethics*, 10, 211–219. <https://doi.org/10.1007/BF00383158>
- Slick, J. (2019). Teaching with cases in disaster and emergency management programs: Instructional design guidance. *International Journal of Mass Emergencies & Disasters*, 37(1), 57–91. <https://doi.org/10.1177/028072701903700106>
- Smith, S. M., & Feldmann-Jensen, S. (2024). Code of ethics and professional standards of conduct for emergency management professionals. *Journal of Emergency Management*, 22(1), 7–22. <https://doi.org/10.5055/jem.0831>
- Stake, R. E. (1995). *The art of case study research*. Sage.
- Strobel, J., & van Barneveld, A. (2009). When is PBL more effective? A meta-synthesis of meta-analyses comparing PBL to conventional classrooms. *Interdisciplinary Journal of Problem-Based Learning*, 3(1). <https://doi.org/10.7771/1541-5015.1046>
- Tawfik, A. A., & Kolodner, J. L. (2016). Systematizing scaffolding for problem-based learning: A view from case-based reasoning. *Interdisciplinary Journal of Problem-Based Learning*, 10(1). <https://doi.org/10.7771/1541-5015.1608>

- Tikhomirov, A. A. (2025). Navigating complex initiatives at the Port Authority of New York and New Jersey: A teaching case on addressing board disengagement and faltering integrity efforts at the government agency. *Journal of Public Affairs Education*, 1–14. <https://doi.org/10.1080/15236803.2025.2478764>
- University of Waterloo. (n.d.). *Engineering cases*. <https://uwaterloo.ca/engineering-cases/>
- Walling, O. (2015). Beyond ethical frameworks: Using moral experimentation in the engineering ethics classroom. *Science and Engineering Ethics*, 21, 1637–1656. <https://doi.org/10.1007/s11948-014-9614-0>
- Wiggins G., & McTighe J. (2005). *Understanding by design*. Association for Supervision and Curriculum Development.
- Wijnia, L., Noordzij, G., Arends, L. R., Rikers, R. M., & Loyens, S. M. (2024). The effects of problem-based, project-based, and case-based learning on students' motivation: A meta-analysis. *Educational Psychology Review*, 36(1), 29. <https://doi.org/10.1007/s10648-024-09864-3>
- Williams, S. M. (1992). Putting case-based instruction into context: Examples from legal and medical education. *The Journal of the Learning Sciences*, 2(4), 367–427.
- Yazan B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report*, 20, 134–152. <https://doi.org/10.46743/2160-3715/2015.2102>
- Yin, R. K. (2017). *Case study research and applications: Design and methods* (6th ed.). Sage.

APPENDIX A: EXAMPLE TEACHING CASE

This section presents a brief hypothetical teaching case using the teaching cases framework proposed in this article.

Community Context and Demographics

Duffsen Hollow is a small municipality with recurrent fluvial flood events that have damaged several local businesses and residential homes. Most of the flood events are minor, but the most recent one exceeded the base flood level (i.e., the level that a flood with a 1% chance of occurring each year would reach) and severely damaged several businesses and homes. The town has a diverse population; most notable is a hard-of-hearing community (25% percent of the community) that resides near the floodplain and has deep historic ties. Many in the community are minorities and have attended a local school that has served the community's needs for over a century. The school was built out of necessity to provide an education for those who were hard of hearing (HH) and from historically marginalized groups.

Narrative

A new program was developed at the state level to help distribute funding based on localities' actions to mitigate flooding. The city previously did not apply for federal funding (through the state) due to a lack of technical expertise. Additionally, with the limited amount of funds the city has in the bank, community members favor using funds to rebuild rather than making mitigation upgrades. Any federal mitigation funding they receive is subject to guidelines in the Disaster Mitigation Act (2000). Other incentives for upgrading mitigation include reduced insurance costs and prioritization for state disaster funding.

Local emergency manager, Mo Harrison, is tasked with developing a hazard mitigation plan and making recommendations to local leadership on spending. The new state program employs a point system to incentivize accreditation; however, in its current pilot stage, there is limited oversight to ensure project follow-through after accreditation is attained. Possible options to gain points are elevations, upgraded stormwater infrastructure, and buyouts, which would be the easiest option. Most of the land identified for buyouts would be areas where the HH community resides. This proposal has sparked intense debate and controversy within the community, particularly among HH residents, who fear losing their cultural heritage and the tight-knit social network. Some have even threatened to submit applications for the school to be considered a historic landmark in an effort to delay any buyouts. Leaders and advocates for the HH community also worry that without a clear plan for relocation, the buyouts would lead to disruptions to their community. Despite this, the majority of the town leadership supports the relocation of this group and has asked Mo to communicate the town's intent to relocate HH residents out of the floodplain where they are currently situated to safer areas.

Applied Scholarly Literature

Studies suggest that there are gaps in emergency managers' communication capabilities for Deaf/HH individuals that can lead to inadequate risk and crisis communication strategies (Engelman et al., 2013; Neuhauser et al., 2013). Nelson and Camp (2020) demonstrated that investments in buyouts yield economic benefits (Nelson & Camp, 2020). However, recommended practices for ensuring a successful buyout program include purchasing clusters of property and considering the costs of long-term management (Salvesen et al., 2018).

However, buyout programs have been found to have varying effects on those experiencing the buyouts. Jerolleman et al. (2024) supported the findings of the National Institute of Building Sciences' (2019) report. They discussed ways in which buyout participants had their agency restrained, calling for more attentiveness to the community-level impacts (e.g., allowing members to identify what a successful buyout looks like). According to Hotard and Ross (2023), higher risk perceptions contributed to a higher likelihood of buyouts, and the willingness to receive a buyout versus relocate was mediated by social factors (e.g., close community ties). Lastly, Binder et al. (2020) concluded that buyout programs often overlook the effects of community disruption. As such, the scholarly literature suggests that emergency managers should proactively involve historically underserved and marginalized populations, such as Deaf/HH individuals, in any buyout conversations.

Alignment with Standards

This case aligns with Standard 2 of the *Professional Code of Ethics* (Smith & Feldmann-Jensen, 2024): "Emergency management professionals use their expertise to communicate clearly, effectively, and appropriately regarding risks" (p. 15). The emergency manager has a deontological mandate to consider the best rhetorical and communication strategies to inform affected populations. Students will refine their communication strategies by using this case to explore how they can effectively communicate difficult decisions to diverse communities while managing mitigation efforts. The goal of this teaching case is to have students synthesize standard EMHS communication strategies and develop practices for ethical decision-making in dilemmas. An essential question for this teaching case is how can emergency managers communicate, balancing the well-being and protection of stakeholders in risk-prone areas with sustaining the culture of marginalized populations?

Discussion Questions

These discussion questions are designed as stepping stones toward the above standards, learning objectives, and essential questions.

- How should the emergency manager communicate the town's intent to the Deaf/HH community or involve them in the process? Should Mo push back on the town's decision?

- How would walking through the decision-making process for ethical dilemmas (see Smith & Feldmann-Jensen, 2024, Appendix C) support or change your answer?
- Would you suggest other options or be open to hearing options presented by the community or general public? If so, what are some other options that could be considered?
- What role should historical ties to an area play in determining the best solution? Are there options that could address/alleviate the concerns of the Deaf/HH community?
- Can the residents use the historic landmark application as a way to stall any plans to buy out the area? What laws would regulate/prohibit/allow such an action?
- What if the Deaf/HH community was a different kind of protected class, such as an Indigenous community?
- In what ways, if any, could the natural geography of the land be used to give back to the relocated community or future communities?

Activities

Design a concept map: Have students read selected articles discussed in the applied scholarly literature, summarize those articles, and develop a diagram or concept map comparing the articles with the teaching case narrative. Consider the unique needs and affordances of the Deaf/HH community at the center of this case. This activity can be done both in person and online using online concept mapping tools. A limited asynchronous version will require pairs or small groups of students to coordinate their schedules to collaboratively design a concept map.

Develop a public-facing communication from the perspective of one or more stakeholders: Have students develop different kinds of communications that address a particular group of stakeholders regarding the mitigation plans (akin to the role of a public information officer [PIO]) before, during, and after the plan is designed or implemented. This activity can be done both in person or online, for example, using small groups to draft communications collaboratively. An asynchronous version may have students post initial communication drafts to different stakeholder groups, provide feedback to one another, and then submit a final version of their communication.