

Enhancing Disaster Preparedness Education through Simulation and International Collaboration: Insights from the CRA-CDEM 2025 Conference in Bangkok

Pierre-Samy JALLAL

PDM, Graduate School of Societal Safety Sciences,
Kansai University

Pierre-Samy JALLAL

Chayanee WONGSURIYANAN

Faculty of Health Science Technology,
Chulabhorn Royal Academy

Chayanee WONGSURIYANAN

Katsuyuki KAMEI

Faculty of Societal Safety Sciences,
Kansai University

Katsuyuki KAMEI

SUMMARY

The CRA-CDEM 2025 International Conference, co-hosted by the Chulabhorn Royal academy (CRa), the HRH Princess Chulabhorn Disaster and Emergency Medicine Center (CDEM), and the Society of Disaster Medicine and Public Health (SDMPH), offered a unique opportunity to examine how experiential learning and international cooperation contribute to disaster preparedness education. This research note analyses the pedagogical and institutional insights derived from participation in this conference, which focused on simulation-based disaster management exercises and multi-agency coordination. Through participant observation and qualitative field notes, the study identifies three main contributions: the effectiveness of simulation exercises in developing decision-making and communication under stress; the critical role of inter-institutional partnerships in advancing the Sendai Framework for Disaster Risk Reduction (2015–2030); and the importance of integrating socio-cultural contexts into disaster preparedness education. The CRa's model, combining medical training, societal safety education, and practical simulation, illustrates an innovative approach to capacity building in Asia. These findings highlight how the intersection of academic research, public health, and international collaboration can strengthen resilience and professional competencies in disaster risk management. This paper concludes that simulation-driven and partnership-based education, such as that implemented by CRa and SDMPH, offers a replicable framework for higher education institutions engaged in societal safety and disaster preparedness training.

Key words

Disaster preparedness; Simulation-based learning; Societal safety; International collaboration; Sendai Framework

1. Introduction

The importance of disaster preparedness education has grown significantly in recent decades as societies face increasingly complex and interconnected risks. The Sendai Framework for Disaster Risk Reduction (2015-2030) emphasizes the necessity of strengthening disaster risk governance, investing in resilience, and promoting education and training that enable communities and institutions to anticipate, respond to, and recover from crises¹⁾. Within this context, the pedagogical integration of simulation-based learning has emerged as a key strategy for building competences in decision-making, communication, and leadership under stress²⁾. Simulations and role-playing exercises provide participants with experiential knowledge that complements theoretical instruction, allowing them to engage with the multidimensional realities of disaster management.

In the same time, International cooperation in disaster education has become essential for sharing expertise and harmonizing training standards across regions. Institutions such as the Chulabhorn Royal academy (CRa) and its HRH Princess Chulabhorn Disaster and Emergency Medicine Center (CDEM) have positioned themselves as leaders in advancing multidisciplinary and multicultural approaches to disaster medicine and societal safety educa-

tion. Since its establishment in 2016 under the patronage of Her Royal Highness Princess Chulabhorn Walailak, the CRa has pursued a mission to integrate science, technology, and humanitarian values into higher education and applied research³⁾. Its activities extend beyond medical education to include environmental science, public health, and social resilience, reflecting an innovative convergence between medical and societal safety sciences.

The CRa-CDEM 2025 International Disaster and Emergency Management Conference, co-hosted with the Society of Disaster Medicine and Public Health (SDMPH), exemplified this integrative vision. Held in Bangkok, Thailand, under the theme “Resilience and Sustainability in action”, the event brought together academics, practitioners, and policy-makers from across Asia, Europe, and the Americas. It served as a living laboratory for observing how simulation-based education and inter-agency collaboration can enhance institutional capacity building. Through participant observation, this study examines how the CRa model operationalizes the principles of the Sendai Framework by translating them into tangible educational practices.

This research note therefore aims to analyze the pedagogical and institutional significance of the CRa-CDEM 2025 Conference as a case study of experiential learning and international collaboration in societal safety education. By

exploring the CRA’s organizational framework, its emphasis on simulation and practical training, and the collaborative dynamics between CRA, CDEM, and SDMPH, this paper contributes to a broader discussion on how universities can strengthen resilience education through partnerships and applied pedagogy. Ultimately, the analysis underscores that fostering “resilience through learning” requires both immersive practice and transnational cooperation, these two pillars that define the Chulabhorn model of disaster preparedness education.

2. Institutional Context and Conference Overview

2.1. The Chulabhorn Royal academy (CRa) and its Mission

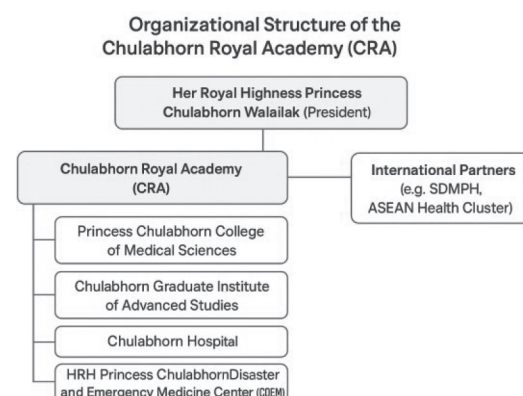
The Chulabhorn Royal academy (CRA) is a public higher education and research institution established in 2016 in Bangkok, Thailand, under the royal patronage of Her Royal Highness Princess Chulabhorn Walailak. The academy was founded with a vision to advance science, technology, environment, and medicine for the service of humanity⁴⁾. As one of the youngest academic institutions in Thailand, the CRA occupies a unique position at the intersection of medical education, public health, and disaster preparedness. Its educational philosophy emphasizes the integration of advanced research, social responsibility, and the application of the knowledge to real-word crises.

The CRA comprises several constituent institutions: the Princess Chulabhorn College of Medical Sciences, the Chulabhorn Graduate Institute of advanced Studies, and the

Chulabhorn Hospital, which provides state-of-the-art healthcare and serves as a practical training environment for medical students⁵⁾. Within this ecosystem, the HRH Princess Chulabhorn Disaster and Emergency Medicine Center (CDEM) plays a pivotal role in promoting disaster medicine education, emergency response research, and community resilience training. The CDEM operates both as an academic research center and as a field-oriented institution supporting emergency medical preparedness in Thailand and the aSEaN region.

The mission of the CRA and CDEM reflects the values of societal safety science, a discipline that integrates natural science, engineering, and social science approaches to address complex risks and foster sustainable resilience⁶⁾. Through partnerships with national agencies and international institutions, the academy contributes to developing a new generation of professionals equipped with interdisciplinary competencies in risk reduction and crisis management.

This structure illustrates the CRA’s inte-



Source: author’s compilation based on CRA institutional documents (2025)

grated approach, combining education, research, and operational engagement. The CDEM’s collaboration with domestic and foreign organizations, such as the Society of Disaster Medicine and Public Health (SDMPH), has made it a regional hub for simulation-based disaster preparedness training and academic exchange.

2.2. The CRa-CDEM 2025 International Conference

The 2nd CRa-CDEM International Disaster and Emergency Management Conference, held from 7 and 9 August 2025 in Bangkok, Thailand, represented a Major academic and professional event co-organized by CRa, CDEM, and SDMPH. The conference was conducted under the overarching theme “Resilience and Sustainability in action”, reflecting the global call to translate disaster risk reduction strategies into concrete, sustainable practices⁷⁾.

The event was designed to bridge the gap between research, policy, and practice. Over 3 days, it featured plenary lectures, and simulation exercises involving participants from universities, hospitals, and emergency response agencies across the Asia-Pacific region. The conference provided a platform to share innovations in disaster risk communication, medical logistics, and multi-agency coordination, while emphasizing the educational value of simulation and stress-based learning.

2.3. Educational and institutional Significance

From an educational perspective, the CRa-CDEM 2025 conference embodied a “learn-

Overview of the CRa-CDEM 2025 International Conference

Date	Session Type	Example of Topics
7 august 2025	Opening & Plenary Sessions	Disaster-Ready Health Systems; Integration of DRR into National Health Policy
8 august 2025	Workshops & Simulations	Role-playing crisis management; CDEM Rally (multi-scenario simulation exercise)
9 august 2025	Panel Discussions & Closing	Faith-based organizations in disaster response; Inclusive resilience strategies

Source: author’s field notes and CRa-CDEM 2025 program materials.

ing-through-action” approach to disaster preparedness. The integration of theoretical panels, role-playing sessions, and full-scale simulations provided participants with a comprehensive understanding of disaster dynamics from both managerial and operational standpoints. Institutionally, the event reinforced CRa’s role as a regional leader in experiential disaster education and a model of public/academic partnership with the Sendai Framework’s Priority 1: “Understanding Disaster Risk”.

The collaboration between CRa, CDEM, and SDMPH further illustrates how academic diplomacy and knowledge exchange contribute to regional capacity building. By combining the research expertise of CRa with the professional networks of SDMPH, the conference advanced both scientific dialogue and practical preparedness. This partnership not only exemplifies the aSEaN spirit of shared resilience but also demonstrates how international collaboration can translate global disaster governance



Front of Chulabhorn Royal academy.
Source: author picture

principles into local educational initiatives.

3. Methodology: Participant Observation

3. 1. Rationale for the Method

This research note is based on participant observation, a qualitative method commonly used in social and disaster sciences to capture lived experiences and informal interactions within complex systems. Originating in anthropology and organizational studies, participant observation allows researchers to engage directly with the environment and actors involved in a phenomenon, thereby generating rich and dependents context insights that cannot be obtained through surveys or secondary data alone⁸⁾. In the context of disaster management education, this method is particularly effective for analyzing simulation-based learning environments, where communication, leadership, and emotional responses play a decisive role in shaping outcomes⁹⁾.

The choice of participant observation aligns with the epistemological framework of Societal Safety Science, which emphasizes the intercon-

nection between human, organisational, and systemic factors in the management of risk¹⁰⁾. This methodological stance supports a holistic understanding of how individuals and institutions translate global frameworks into practice through education, simulation, and cooperation.

3. 2. Research Setting and Data Collection

For this study, the data were collected during the 2nd CRa-CDEM International Disaster and Emergency Management Conference, held from 7 to 9 August in Bangkok, Thailand. The researcher participated as an academic observer under the auspices of Kansai University's Graduate School of Societal Safety Sciences, within the scope of an overseas research fund dedicated to comparative studies on disaster resilience.

During this conference, field notes were systematically recorded on the structure, pedagogical approach, and participants interactions observed throughout the plenary sessions, workshops, and simulation exercises. Informal discussions with CRa faculty members, SDMPH experts, and student volunteers from the School of Paramedicine provided supplementary contextual information. Visual documentation was also taken, with permission from the organisers, to aid in subsequent analysis.

The observation focused on three key components of the conference program; academic session presenting policy frameworks and disaster health research; Workshops and role-playing exercises aimed at developing crisis communication and decision-making skills; The

CDEM Rally, a full-scale field simulation designed to test multi-agency coordination under stress.

These three dimensions reflect different scales of learning, cognitive, behavioral, and operational, within the CRA's pedagogical model.

3.3. Analytical Framework

Following the fieldwork, qualitative data were analyzed using thematic content analysis, a method suited for identifying patterns and meanings across qualitative narratives¹¹⁾. The analysis was guided by three central questions:

- How do simulation and experiential learning contribute to disaster preparedness education?
- What institutional mechanisms enable effective collaboration between CRA, CDEM, and SDMPH?
- How does the CRA model exemplify the principles of the Sendai Framework through education and training?

To maintain academic rigor, the research process adhered to principles of reflexivity and positionality¹²⁾. as a researcher directly involved in the learning environment, the observer remained aware of personal biases and potential influences on the data. Reflexive memos were written daily to separate subjective impressions from analytical observations. This approach ensured transparency and reliability in interpreting the experiential data collected at CRA-CDEM 2025.

4. Findings and analysis

The analysis of field observations collected during the CRA-CDEM 2025 Conference identified three major thematic dimensions:

- The educational impact of simulation-based learning
- The institutional mechanisms of inter-agency coordination
- The role of international cooperation in reinforcing societal safety education

These findings highlight the multidimensional character of the CRA model, which connects pedagogy, practice and policy within a unified framework for disaster preparedness.

4.1. Simulation-Based Learning and Experiential Pedagogy

Simulation-based education formed the pedagogical backbone of the CRA-CDEM 2025 Conference. The workshops and role-playing demonstrated how immersive learning environments cultivate situational awareness, leadership, and rapid decision making under pressure.

Participants were placed in realistic disaster scenarios (flood, refuge camp setup) and tasked with managing scarce resources and coordinating diverse actors. These exercises mirrored experiential learning theory, which posits that knowledge emerges through the transformation of experience into reflective understanding (Kolb, D.a. 1984).

The effectiveness of this approach was evident in the participants' ability to transition from reactive to proactive behavior. Through cycles of action, reflection, and adaptation,

learners internalized key principles of crisis communication and triage management. The stress induced during simulations functioned as a controlled pedagogical tool, echoing findings from previous studies on stress situation in emergency medicine training¹³⁾.

Furthermore, the use of feedback sessions, in which animators debriefed participants after the exercises, enhanced reflective learning. The instructors at CRA emphasized not only technical performance but also emotional regulation, teamwork, and leadership ethics. This holistic emphasis positions simulation not merely as training but as a transformative learning process bridging cognitive, emotional, and social competencies essential for disaster professionals.

4.2. Inter-agency Coordination and the Role of Institutional Design

A second analytical dimension concerns the institutional framework enabling effective inter-agency coordination. The conference revealed how structured collaboration among medical, military, and civilian entities can enhance response efficiency. Observations showed that well-defined command hierarchies, clear communication channels, and mutual understanding between agencies significantly reduced operational confusion.

CRA's organizational approach shows best practices in emergency management. By studying multi-agency interactions, the CRA-CDEM exercises provided a safe environment to identify communication bottlenecks and test interoperability. Participants frequently cited the value of standardized protocols and shared

terminology, which facilitated rapid coordination despite cultural and institutional differences.

At an institutional level, CRA's integration of the CDEM within a university framework demonstrates a hybrid model that combines academic research, professional training, and policy outreach. This design aligns with the concept of "learning organizations" in crisis management, where institutions continuously adapt through feedback and cross-sector learning¹⁴⁾. The event also showcased the contributions of student volunteers from the school of Paramedicine, who served both as logistical staff and as simulated victims, embodying the academy's philosophy of "learning by doing" across all academic levels.

4.3. International Collaboration and Knowledge Co-Creation

The CRA-CDEM 2025 Conference was also a remarkable case of academic diplomacy and transnational knowledge exchange. The partnership between the Chulabhorn Royal academy, the HRH Princess Chulabhorn Disaster and Emergency Medicine Center, and the Society of Disaster Medicine and Public health (SDMPH) exemplified how international collaboration can operationalize the principles of the Sendai Framework for Disaster Risk Reduction through shared educational initiatives (UNDRR, 2015).

Panel discussions and keynote lectures revealed how CRA's regional model is connected to global disaster governance agendas. The involvement of experts from Tohoku University and Columbia University, for

example, bridged scientific research and practical training, fostering mutual learning between institutions affected by different types of disasters. This reflects the co-production of knowledge principle, where stakeholders jointly generate actionable insights¹⁵⁾.

Furthermore, CRA’s partnerships within the aSEaN Health Cluster illustrate how regional networks can institutionalize continuous training and capacity building. By engaging both governmental and academic actors, CRA contributes to a regional resilience architecture consistent with the aSEaN agreement on Disaster Management and Emergency Response (aaDMER).

International collaboration also plays an important pedagogical role. Exposure to multinational perspectives allowed participants to challenge their assumptions and adopt com-

parative viewpoints, thereby strengthening their global risk literacy. The synthesis of diverse methodologies showed how international cooperation enhances innovation in societal safety science¹⁶⁾.

4. 4. Synthesis of Results

Overall, the findings suggest that the CRA-CDEM model achieves a synergy between pedagogy and institutional design. The combination of experiential learning, organizational coordination, and international collaboration forms a comprehensive educational ecosystem aligned with the vision of societal safety science.

This triadic framework illustrates how disaster preparedness education can transcend disciplinary and national boundaries. The CRA experience demonstrates that building resilience is not only a matter of infrastructure or policy but also of cultivating adaptive learning systems capable of responding to evolving risks.

5. Discussion

5. 1. Simulation-Based Learning as a Pillar of Societal Safety Education

The findings from the CRA-CDEM 2025 conference reaffirm the growing recognition that simulation-based learning is not merely a supplementary teaching technique but a core pedagogical strategy in societal safety education. In disaster management, where outcomes depend on rapid cognition and coordinated action under uncertainty, experiential learning creates an embodied understanding of decision making processes.

Correspondence matrix between analytical themes, observed mechanisms and implications

analytical theme	Observed Mechanisms	Educational/ Institutional Implications
Simulation based learning	Experiential role-playing, stress-based training,debrief sessions	Enhances decision-making, situational awareness, and emotional regulation in crisis contexts
Inter agency coordination	Structured communication hierarchical command, cross-sector exercises	Promotes interoperability and mutual understanding between civil, military, and medical actors
International collaboration	CRA-SDMPH partnership, aSEaN network engagement	Facilitates knowledge co-creation and policy alignment with global DRR frameworks

Source: author’s field notes (2025)

This approach directly supports the Sendai Framework’s Priority 1 (Understanding the Risk) which calls for integrating disaster risk knowledge into educational curricula (UNDRR, 2015).

By allowing participants to “fail safely” in controlled scenarios, simulations cultivate a resilient mindset that bridges theoretical awareness and practical competence. Research in crisis pedagogy shows that experiential exposure fosters adaptive expertise, a capacity to apply learned principles to new complex situations¹⁷⁾. The CRa’s model demonstrates how simulation environments can transform learners from passive recipients of information into active problem-solvers capable of ethical judgment and contextual reasoning. Such educational designs are aligned with Kolb’s cyclical model of *concrete experience, reflective observation, abstract conceptualisation, and active experimentation* (Kolb, D.a. 1984), providing a theoretical foundation for continuous improvement in disaster education.

5.2. Institutional Integration and the “Learning Organization” Model

From an institutional perspective, the CRa-CDEM partnership exemplifies what Senge termed the “learning organization”; a structure that continuously adapts through reflection, experimentation, and knowledge sharing. The embedding of the CDEM within a university setting enables the cross-pollination of academic research, field training, and community engagement. This configuration contrasts with traditional top-down disaster management systems, which often separate scientific inquiry

from operational practice. By foresting inter-departmental collaboration between medical, paramedical, and public health faculties, CRa bridges the gap between theory and response.

Such integration also aligns with the human security paradigm, which emphasizes multidimensional protection through proactive education and institutional preparedness¹⁸⁾. The CDEM Rally, for example, operates as both an assessment tool and continuous feedback mechanism, reinforcing an organizational learning loop. This reflexive model of education contributes to the broader goal of societal safety, which, as conceptualized by Kansai University, seeks to identify and mitigate risks embedded in modern social systems¹⁹⁾. The CRa’s institutional practices thus offer a replicable blueprint for universities aiming to institutionalize resilience through academic curricula and applied research.

5.3. International Collaboration and Knowledge Diplomacy

The CRa-CDEM 2025 conference underscores the critical role of international academic partnerships in enhancing the global exchange of disaster knowledge. Crossborder collaboration, as seen between CRa, SDMPH, and universities in Japan and the United States, exemplifies what can be termed knowledge diplomacy, the use of educational cooperation as a means to advance collective resilience²⁰⁾. This aligns with the Sendai Framework’s Priority 2 (Strengthening Disaster Risk Governance) which encourages international and intersectoral collaboration to translate policy into practice.

Through shared exercises and comparative discussions, the conference enabled participants from diverse backgrounds to negotiate cultural differences in communication, hierarchy, and leadership. Such cross-cultural learning is essential for developing standardized yet flexible response protocols adaptable to regional contexts. In doing so, CRa contributes to the formation of a transnational epistemic community, a network of experts and educators committed to promoting evidence-based disaster education across Asia and beyond.

Moreover, the partnership between CRa and SDMPH serves as a bridge between public health and societal safety, two disciplines that historically evolved in parallel but now converge around resilience-building. By institutionalizing these collaborations within the aSEaN Health Cluster framework, the CRa initiative demonstrates that resilience education can also function as soft power, reinforcing diplomatic and humanitarian ties through shared capacity building.

5.4. Implications for Higher Education and Policy

The CRa experience offers actionable lessons for higher education institutions seeking to mainstream disaster preparedness into their curricula. First, universities can adopt modular simulation courses that integrate social, medical, and technical perspectives on emergencies. Second, partnerships between academia and emergency response agencies can enhance realism and ensure that training outcomes meet professional standards. Third, establishing regional alliances, similar to CRa's

network with aSEaN partners, can facilitate knowledge circulation and mutual support in crisis situations.

At the policy level, the CRa model highlights the need for sustained investment in educational resilience infrastructure, including simulation labs, scenario design teams, and digital platforms for remote participation. Governments and educational ministries should recognize simulation-based and experiential training as core competencies rather than elective skills. By embedding such practices within national disaster education frameworks, policymakers can nurture a culture of preparedness consistent with the global goals of the Sendai Framework and the UN Sustainable Development Goal 13 (Climate action).

5.5. Theoretical Synthesis

Synthesizing the findings, this study suggests that the CRa-CDEM model exemplifies a systemic approach to learning resilience with education, organization, and cooperation from an interdependent triad.

The model operates across three interconnected levels:

- Pedagogical level: Simulation and experiential learning develop adaptive cognitive and behavioral capacities.
- Institutional level: The university functions as a reflexive organisation embedding risk literacy into its operations.
- International level: Cooperation facilitates shared learning and cross-pollination of disaster management innovations.

These levels embody the principles of *Societal Safety Science*, which aims to produce

integrative knowledge for risk reduction and sustainable development. In this sense, the CRA initiative not only strengthens individual preparedness but also contributes to the creation of resilient knowledge systems networks of educators and practitioners capable of anticipating, mitigating, and learning from crises.

6. Conclusion

This research note has examined the educational and institutional dimension of the CRA-CDEM 2025 International Disaster and Emergency Management Conference as a case study of simulation based learning and international collaboration in societal safety education. Through participant observation and qualitative analysis, the study observed three complementary drivers of effective disaster preparedness education: experiential pedagogy, organizational integration, and transnational cooperation.

At the pedagogical level, simulation exercises proved to be powerful tools for fostering adaptive expertise and reflective decision making under pressure. These activities illustrate how controlled stress environments can transform cognitive knowledge into embodied competence, thereby closing the gap between classroom theory and field practice.

At the institutional level, the Chulabhorn Royal academy's hybrid model demonstrates the potential of universities to function as *learning organizations* that continuously evolve through feedback and interdisciplinary collaboration. By embedding the HRH Princess Chulabhorn Disaster and Emergency Medicine Center (CDEM) within a higher-education

framework, the CRA has institutionalized a culture of preparedness that bridges medicine, public health, and societal safety sciences.

Always at the international level, the partnership between CRA, the Society of Disaster Medicine and Public Health (SDMPH), and aSEaN partners exemplifies the growing importance of knowledge diplomacy in disaster risk reduction. Such collaborations not only align educational initiatives with the Sendai Framework for Disaster Risk Reduction (2015-2030) but also contribute to the development of shared regional standards in crisis communication, health security, and humanitarian response.

From a broader perspective, the CRA experience highlights that resilience is a learning process with a continuous interaction between knowledge production, institutional adaptation, and collective engagement. Embedding disaster preparedness education within universities is therefore not solely an academic endeavor; it is a societal investment that cultivates leadership, empathy, and foresight. The integration of simulation-based and partnership-oriented learning models can enable higher education institutions to become catalysts for resilient societies.

Future research should deepen this analysis by comparing different models of disaster education across Asia, Europe, and Africa, identifying how local contexts influence the transferability of experiential learning frameworks. Further studies might also investigate the long-term impact of simulation-based training on professional behavior and community resilience outcomes.

In conclusion, the CRa-CDEM 2025 model demonstrates that education, when combined with cooperation and reflection, can become a form of resilience itself. By transforming experience into knowledge and knowledge into practice, the Chulabhorn Royal academy and its partners provide a living example of how universities can serve as engines of safety and sustainability in an increasingly uncertain world.

acknowledgements

The author expresses sincere gratitude to the Chulabhorn Royal academy (CRa), the HRH Princess Chulabhorn Disaster and Emergency Medicine Center (CDEM), and the Society of Disaster Medicine and Public Health (SDMPH) for granting permission to participate in and study the CRa-CDEM 2025 International Conference.

Special thanks are also extended to the volunteers and faculty members of the CRa School of Paramedicine, whose dedication made the simulations and workshops possible.

This research was supported by the Overseas Research Fund of Kansai University Graduate School of Societal Safety Sciences (FY2025).

The author acknowledges the guidance of academic advisors and the editorial team of the Journal of Societal Safety Sciences for their constructive insights.

Notes

- (1) all data presented in this paper were obtained through participant observation and qualitative field notes collected during the CRa-CDEM 2025 Conference in Bangkok.
- (2) Photographs, figures, and diagrams are original compilations by the author, based on publicly available materials and on-site documentation authorized by the CRa

organizing committee.

Footnotes

- (1) United Nations Office for Disaster Risk Reduction (UNDRR) (2015). Sendai Framework for Disaster Risk Reduction 2015-2030. Geneva: UNDRR.
- (2) Kolb, D. a. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall, pp. 35-50. (2015 reissue)
- (3) Chulabhorn Royal academy (2023). about CRa. <https://www.cra.ac.th/en/>
- (4) Chulabhorn Royal academy (2023). about CRa. <https://www.cra.ac.th/en/>
- (5) Chulabhorn Royal academy (2024). Chulabhorn Royal academy Overview. <https://www.cra.ac.th/en/overview>
- (6) Faculty of Societal Safety Sciences, Kansai University (2024). What is Societal Safety Sciences? https://www.kansai-u.ac.jp/Fc_ss/english/about/index.html
- (7) CRa-CDEM (2025). CRa-CDEM 2025 International Disaster and Emergency Management Conference - Program Book. Bangkok: Chulabhorn Royal academy, august 2025.
- (8) Spradley, J. P. (1980). *Participant Observation*. Holt, Rinehart and Winston.
- (9) Kolb, D. a. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall, pp. 35-50.
- (10) Faculty of Societal Safety Sciences, Kansai University (2024). What is Societal Safety Sciences? https://www.kansai-u.ac.jp/Fc_ss/english/about/index.html
- (11) Braun, V. & Clarke, V. (2006). Using Thematic analysis in Psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101.
- (12) Finlay, L. (2002). Negotiating the Swamp: The Opportunity and Challenge of Reflexivity in Research Practice. *Qualitative Research*, 2(2), pp. 209-230.
- (13) Cant, R. P. & Cooper, S. J. (2017).

- Simulation in the Internet age: The Place of Web-Based Simulation in Nursing Education — an Integrative Review. *Nurse Education Today*, 48, pp. 132-139.
- (14) Senge, P. (1990). *The Fifth Discipline: The art and Practice of the Learning Organization*. Doubleday, pp. 121-145.
- (15) Cash, D. W. et al. (2003). Knowledge Systems for Sustainable Development. *PNaS*, 100(14), pp. 8086-8091.
- (16) aSEaN Secretariat (2016). *aSEaN agreement on Disaster Management and Emergency Response (aaDMER) Work Programme 2016-2020*. Jakarta: aSEaN Secretariat.
- (17) Ericsson, K. a. (2008). Deliberate Practice and acquisition of Expert Performance: a General Overview. *academic Emergency Medicine*, 15(11), pp. 988-994.
- (18) United Nations Development Programme (UNDP) (1994). *Human Development Report 1994: New Dimensions of Human Security*. New York: Oxford University Press.
- (19) Faculty of Societal Safety Sciences, Kansai University (2024). What is Societal Safety Sciences? https://www.kansai-u.ac.jp/Fc_ss/english/about/index.html
- (20) Knight, J. (2013). The Changing Landscape of Higher Education Internationalization for Development. *Journal of Studies in International Education*, 17(1), pp. 85-102.
- [1] United Nations Office for Disaster Risk Reduction (UNDRR) (2015). *Sendai Framework for Disaster Risk Reduction 2015-2030*. Geneva: UNDRR.
- [2] Kolb, D. a. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Prentice Hall.
- [3] Chulabhorn Royal academy (2023). about CRa. <https://www.cra.ac.th/en/>
- [4] Chulabhorn Royal academy (2024). Chulabhorn Royal academy Overview. <https://www.cra.ac.th/en/overview>
- [5] Faculty of Societal Safety Sciences, Kansai University (2024). What is Societal Safety Sciences? https://www.kansai-u.ac.jp/Fc_ss/english/about/index.html
- [6] CRa-CDEM (2025). *CRa-CDEM 2025 International Disaster and Emergency Management Conference—Program Book*. Bangkok: Chulabhorn Royal academy.
- [7] Spradley, J. P. (1980). *Participant Observation*. Holt, Rinehart and Winston.
- [8] Braun, V. & Clarke, V. (2006). Using Thematic analysis in Psychology. *Qualitative Research in Psychology*, 3(2), pp. 77-101.
- [9] Finlay, L. (2002). Negotiating the Swamp: The Opportunity and Challenge of Reflexivity in Research Practice. *Qualitative Research*, 2(2), pp. 209-230. DOI: <https://doi.org/10.1177/146879410200200205>
- [10] United Nations Office for Disaster Risk Reduction (UNDRR) (2021). *Ethical Guidelines for Disaster Risk Reduction Research*. Geneva: UNDRR.
- [11] Cant, R. P. & Cooper, S. J. (2017). Simulation in the Internet age: The Place of Web-Based Simulation in Nursing Education—an Integrative Review. *Nurse Education Today*, 48, pp. 132-139.
- [12] Senge, P. (1990). *The Fifth Discipline: The art and Practice of the Learning Organization*. Doubleday.
- [13] Cash, D. W., Clark, W. C., alcock, F., Dickson, N. M., Eckley, N., Guston, D. H., Jager, J. & Mitchell, R. B. (2003). Knowledge Systems for Sustainable Development. *Proceedings of the National academy of Sciences (PNaS)*, 100(14), pp. 8086-8091.
- [14] aSEaN Secretariat (2016). *aSEaN agreement on Disaster Management and Emergency Response (aaDMER) Work Programme 2016-2020*. Jakarta: aSEaN Secretariat.
- [15] Ericsson, K. a. (2008). Deliberate Practice and acquisition of Expert Performance: a General Overview. *Academic Emergency*

- Medicine, 15(11), pp. 988-994.
- [16] United Nations Development Programme (UNDP) (1994). Human Development Report 1994: New Dimensions of Human Security. New York: Oxford University Press.
- [17] Knight, J. (2013). The Changing Landscape of Higher Education Internationalization for Development. *Journal of Studies in International Education*, 17(1), pp. 85-102.
- [18] United Nations Educational, Scientific and Cultural Organization (UNESCO) (2020). Education for Sustainable Development: a Roadmap. Paris: UNESCO Publishing.

(原稿受付日：2025年11月13日)