Horizon J. Hum. & Soc. Sci. Res. 7 (S): 20 – 30 (2025)

Journal of Humanities and Social Sciences Research
www.horizon-JHSSR.com

RESEARCH ARTICLE
Peer-reviewed | Open Access

Making Cities Resilient Assessment: A Proactive Experiential-Based Learning Activity for Graduate Students to Enhance Climate and Disaster Risk Reduction Awareness

Andres Winston C. Oreta[1]*

[1]*Department of Civil Engineering, STE Division, De La Salle University, Manila, Philippines*

ARTICLE INFO

Article history
RECEIVED: 06-Mar-25
REVISED: 18-Apr-25
ACCEPTED: 04-Jun-25
PUBLISHED: 15-Jul-25

*Corresponding Author
Andres Winston C. Oreta
E-mail: andres.oreta@dlsu.edu.ph

Citation: Andres Winston C. Oreta (2025). Making Cities Resilient Assessment: A Proactive Experiential-Based Learning Activity for Graduate Students to Enhance Climate and Disaster Risk Reduction Awareness. Horizon J. Hum. Soc. Sci. Res. 7 (S), 20–30. https://doi.org/10.37534/bp.jhssr.2025.v7.nS.id1290.p20-30

ABSTRACT

Introduction: As climate change and disaster risks increasingly threaten urban areas, education must evolve to equip future engineers with practical tools for resilience assessment and planning. The *Graduate Seminar on Disaster Risk Reduction and Infrastructure Development (DRRID)* at De La Salle University (DLSU), Manila, integrates proactive, experience-based strategies to foster student engagement with real-world challenges in disaster risk reduction. **Methods:** A core component of the course is the *Making Cities Resilient* group project, grounded in Kolb's Experiential Learning Theory. Using the United Nations Office for Disaster Risk Reduction (UNDRR)'s **Ten Essentials for Making Cities Resilient** and the **Disaster Resilience Scorecard for Cities**, student groups select a city or municipality in the Philippines for evaluation. The assessment process involves internet-based research, field surveys, and interviews with local government officials and community stakeholders. Findings are synthesized into a comprehensive scorecard analysis, along with tailored recommendations for enhancing urban resilience. **Results:** The activity enabled students to critically evaluate urban resilience capacities, identify systemic gaps, and suggest actionable improvements. Students demonstrated increased comprehension of the Sendai Framework's principles and the multifaceted nature of resilience-building. Written reports and presentations—delivered either onsite or online—showcased their ability to bridge theory and practice in disaster risk reduction. Discussion: This hands-on approach fostered student engagement, critical thinking, and interdisciplinary collaboration. It highlighted the importance of participatory governance, data-driven assessments, and local knowledge in building resilient cities. The project also underscored the educational value of experiential learning in preparing students for complex, real-world challenges. Conclusion: Integrating the *Making Cities Resilient assessment* into the DRRID seminar significantly enhanced students' awareness and competencies in climate and disaster risk reduction. The experiential format provided a meaningful platform for applying academic concepts to tangible community-based problems, thus strengthening the educational foundation for future civil engineers committed to urban resilience.

Keywords: Making Cities Resilient, Experiential Learning, Civil Engineering, Graduate Seminar, Disaster Risk Reduction Disabilities, Numbered Heads Together (NHT), Science Education, Teaching Strategies.

1. Introduction

Post-graduate programs in civil engineering at Higher Education Institutions (HEIs) aim to train professionals to become leaders in specialized fields such as Construction Technology and Management, Geotechnical Engineering, Structural Engineering, Transportation Planning and Engineering, and Hydraulics and Water Resources Engineering. However, it is equally important for HEIs to broaden the knowledge and awareness of PhD, MSCE, and Master of Engineering graduates on societal issues, aligning with one of the fundamental principles of the Civil Engineering Code of Ethics: "Civil engineers shall uphold and advance the integrity, honor, and dignity of the civil engineering profession by using their knowledge and skill for the enhancement of human welfare and the environment." To this end, De La Salle University's Graduate Studies in Civil Engineering program also emphasizes training professional civil engineers to provide solutions to contemporary issues, particularly sustainability and disaster risk. In the PhD program at De La Salle University (DLSU), students are required to complete 30 academic units, including a graduate seminar (De La Salle University., n.d.). One such seminar is graduate seminar on "Disaster Risk Reduction and Infrastructure Development (DRRID)," which aims to produce civil engineering graduates who are not only experts in their technical fields but also "leaders and advocates for creating a more resilient built environment."

How to effectively deliver the DRRID graduate seminar to professional civil engineers is a challenge. The author aims to introduce the students to a very broad field of study related to Disaster Risk Reduction and Management (DRRM) which is not included in the undergraduate curriculum. A DRRM course needs to cover the basic principles and terminology related to disasters, hazards, risk and resilience and the relationship among these basic concepts which can be done a lecture type approach. Various learning materials on DRRM (e.g. Nakano, G., & Yamori, K., 2021; King, W. (Ed.), 2012) have been developed to promote DRR education. Nakano and Yamori (King, W. (Ed.)., 2012) pointed out in their paper on DRR education and also based on their review of literature that "increased knowledge and skills in DRR do not necessarily lead to behavioral changes in learners because the three approaches common in DRR education: (1) active instructor/passive learner approach, (2) knowledge-transmission approach, and (3) short-term knowledge evaluation approach inhibit the fostering of a proactive attitude." To overcome the barrier between knowledge and behavior, Nakano and Yamori propose a new "proactive attitude paradigm" which consists of the (1) instructor/learner fusion approach, (2) participation in a community of practice approach, and (3) long-term commitment evaluation approach. This new proactive approach is suited in the DRRID graduate seminar. With the target students in the DRRID graduate seminar being professional civil engineers and researchers, they appreciate more the new knowledge through actual application and research. A similar proactive teaching and learning approach is "Experiential Learning" which is "learning from experience" or "learning by doing." Experiential education first immerses learners in an experience and then encourages reflection about the experience to develop new skills, new attitudes, or new ways of thinking." Kolb's experiential learning theory (ELT) (Kolb, A., & Kolb, D. A., 2017) is the most widely recognized and used concept in experiential learning. Experiential learning often involves teamwork, enabling students to practice collaboration and develop interpersonal skills. Fieldwork experiences, in particular, provide students with the opportunity to explore and apply classroom knowledge in real-world settings. These experiences bridge educational content with external communities, whether at a building site, within a neighborhood, or across a broader community or city. Examples of ELE activities include hands-on laboratory experiments, internships, practicums, field exercises, study abroad programs, and undergraduate research. In civil engineering, experiential learning modules have been integrated into the undergraduate curriculum through laboratory-based courses such as Geotechnical Engineering (Kershaw, D., et al., 2021), Reinforced Concrete (Lovell, M., et al., 2021), and Steel Design (Carroll, R., et al., 2022). The challenge in this paper is how can a Proactive Experiential Learning be introduced in a seminar so that the broad field of DRRM will be appreciated by the graduate civil engineering students and professionals.

Guided by the new "proactive attitude paradigm" introduced by Nakano and Yamori and Kolb's ELT, the author introduced a simple but effective group exercise on "Making Cities Resilient" where the students assess a city's resilience to disasters. The project is guided by the UNDRR's Ten Essentials for Making Cities Resilient Framework (United Nations Office for Disaster Risk Reduction., n.d.). The MCR project exemplifies a proactive teaching and learning approach and "experiential learning," through an engaged process where students "learn by doing" and reflect on their experiences as they conduct onsite inspection and desktop assessment of a city's resilience to disasters. Through this group exercise, the students have a deeper understanding on the relevance of their civil engineering profession in resilience building.

2. PROACTIVE EXPERIENTIAL LEARNING IN THE CLASSROOM

The new "proactive attitude paradigm" (Nakano, G., & Yamori, K., 2021) consisting of three approaches namely, (1) the "instructor/learner fusion approach", (2) "participation in a community of practice approach" and (3) "long-term commitment evaluation approach" is described below:

1) *Instructor/learner fusion approach* – Students are not just passive recipients of knowledge but they actively engage in research and application and they share their learnings and experiences to their teachers.
2) *Participation in a community of practice approach* – Learning is enhanced when the student becomes a member of community in "doing things together.
3) Long-term commitment evaluation approach – Student assessment is not based on the students' present knowhow of concepts but on the learners' attitudes on future application and relevance to their career and professional practice. In the case of DRR education, "the students are evaluated how learners have committed to activities related to DRR in areas such as their career choices, participation in DRR activities after graduation, self-affirmation and self-confidence, and their responses in the event of a disaster as well as the damage-mitigation effects of their DRR activities (Nakano, G., & Yamori, K., 2021)".

Experiential learning experience (ELE) is an innovative approach that goes beyond traditional classroom teaching. It involves actively engaging students in real-world experiences, allowing them to "learn by doing." Kolb's experiential learning theory (ELT) (Kolb, A., & Kolb, D. A., 2017) is the most widely recognized and used concept in experiential learning. Kolb developed from the Lewin cycle model (Kolb, A., & Kolb, D. A., 2017) the idea that students have a dominant phase of the cycle during which they prefer to learn and therefore will have preferred modes of learning.

The four phases of Kolb's theory on ELE are summarized in Figure 1.

(1) *Concrete Experience* - Engaging directly in authentic or real-world situation,
(2) *Reflective Observation* - Relating observations to past experience and knowledge,
(3) *Abstract Conceptualization* - Generating ideas and distilling perceptions, and
(4) *Active Experimentation* - Testing new ideas and designs and honing new skills in a new experience

For teachers, providing students with opportunities to engage in experiences related to their learning is essential. Figure 1 presents the description of the four stages of ELE. Teachers should design environments and student-centered assessment tasks that allow students to learn through direct experience. In a typical classroom setting, content is readily available for students to read, understand, and analyze. While mastering content is important, the core of experiential learning lies in learning through the process. The initial phase of an Experiential Learning Experience (ELE) involves immersing students in a real-world situation. Following this experience, students

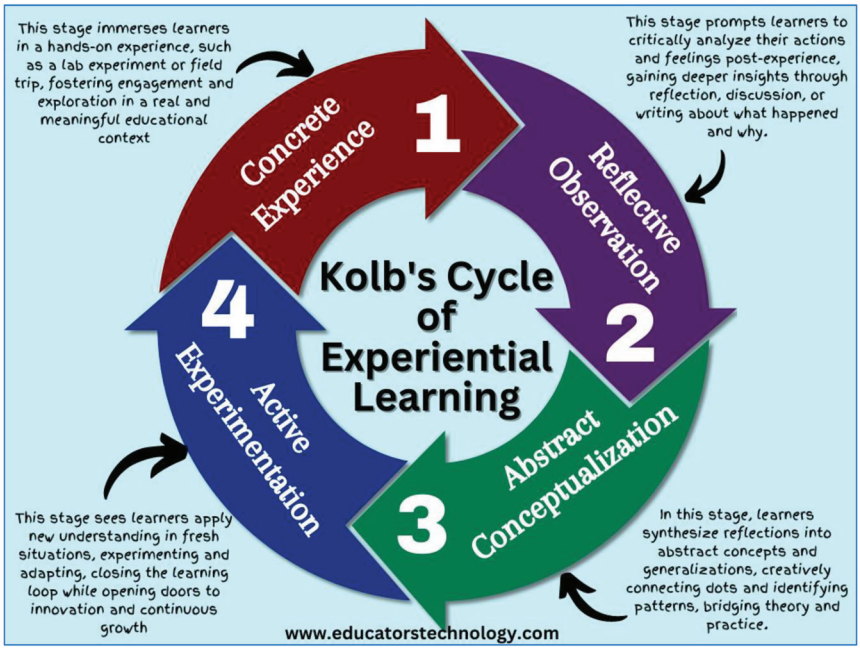


Figure 1. Cycle of Experiential Learning Experience.

engage with the content, reflect on their experiences, and apply their newfound knowledge to different contexts.

The following section will explore how a proactive ELE, incorporating both fieldwork and desktop research, was implemented in a group project within the DRRID seminar to achieve the course learning outcomes.

3. OVERVIEW OF THE DRRID GRADUATE SEMINAR

Course Lectures

The Disaster Risk Reduction and Infrastructure Development (DRRID) graduate seminar aims to introduce practicing and research engineers on the basic concepts and applications of Disaster Risk Reduction and Management (DRRM) especially in relation to Infrastructure Development in order to enhance and broaden their perspectives in research and application to DRRM. Lectures, videos and reading materials will highlight the impact of natural hazards on the built environment and ways of reducing the adverse effects of the natural hazards to improve infrastructure and community resilience. Among the DRRID lectures delivered during the seminar are various topics related to the theme of the course which are listed as follows:

1) DRRID-01: *Understanding Hazards and Disasters*
2) DRRID-02*: Introducing Infrastructure Resilience*
3) DRRID-03: *Disaster Risk Reduction & Assessment*
4) DRRID-04: *Making Cities Resilient*
5) DRRID-05: *Promoting Safe Schools & Hospitals*
6) DRRID-06: *Preserving Heritage Structures*
7) DRRID-07: *DRRM and ICT*

Resource speakers are also invited to deliver complementary lectures on specialized topics related disaster risk reduction and resilient structures such as *Climate Change Adaptation, Low Impact Development, Land Use Planning, Geographical Information System, Information and Communication Technology, Resilient Transportation, Earthquake Engineering and Community Resilience.* The lectures are usually introductory with some sample applications. Students who want to know more about the specific topics are advised to refer to the related literature.

Course Requirements

To develop the students' understanding and interest on the seminar's theme on disaster risk reduction and infrastructure development and resilience, the students are required to accomplish assignments and group projects. *Individual assignments*consist of a report on a recent natural disaster, a review of related literature based on specified keywords like natural hazards (earthquake, wind, flood, tsunami, landslide, etc.), critical infrastructures (schools, hospitals, bridges, water systems, etc.) and resilience. The students are also required to take a *Knowledge-Check Quiz* on basic concepts about the theme of the seminar. Another individual assignment is a*DRRID Seminar Paper* which they need to write and present in the DRRID Forum The seminar paper must address the issue of development and disasters in relation to the role of civil engineers or engineers, in general, to DRR and resilience building. The paper aims to assess the student's ability to conduct library and internet research, to develop a concept paper for future research or to apply tools and concepts discussed in class and learned from lectures and readings. One group project is required in this seminar. This is *the Making Cities Resilient (MCR) assessment project*.

4. MAKING CITIES RESILIENT ASSESSMENT PROJECT

Launched in May 2010 by the United Nations on Disaster Risk Reduction (UNDRR), the Making Cities Resilient (MCR): "My city is getting ready!" campaign addresses local governance and urban risk issues. The Making Cities Resilient Campaign "aims at getting Mayors, local governments and national authorities to take actions towards making cities resilient as part of sustainable urbanization" (United Nations Office for Disaster Risk Reduction., n.d.). The first phase (2010-2015) of the campaign was based on the Hyogo Framework for Action, while the second phase (2015 – 2030) adopted the Sendai Framework for Disaster Risk Reduction. The MCR campaign was promoted through a checklist referred to as the "Ten Essentials for Making Cities Resilient." The Ten-Point checklist of the Essentials for Making Cities Resilient (Figure 2) consists of key questions aligned for each essential which are used for self-assessment. A handbook (United Nations Office for Disaster Risk Reduction., 2017) is available to guide the users on the MCR checklist. In the present MCR campaign, a Disaster Resilience Score Card for Cities Figure 3 is available to all to use in the self-assessment of a city or municipality.

- ***E01:*** *Organize for Disaster Resilience*
- ***E02:*** *Identify, Understand and Use Current and Future Risk Scenarios*
- ***E03:*** *Strengthen Financial Capacity for Resilience*
- ***E04:*** *Pursue Resilient Urban Development and Design*
- ***E05****: Safeguard Natural Buffers to Enhance the Protective Functions Offered by Natural Ecosystems*
- ***E06****: Strengthen Institutional Capacity for Resilience*
- ***E07:*** *Understand and Strengthen Societal Capacity for Resilience*
- ***E08:*** *Increase Infrastructure Resilience*
- ***E09:*** *Ensure Effective Preparedness and Disaster Response*
- ***E10:*** *Expedite Recovery and Build Back Better*

Figure 2. The Ten Essentials for Making Cities Resilient.

Figure 3. Disaster Resilience Scorecard for Cities (United Nations Office for Disaster Risk Reduction., n.d.).

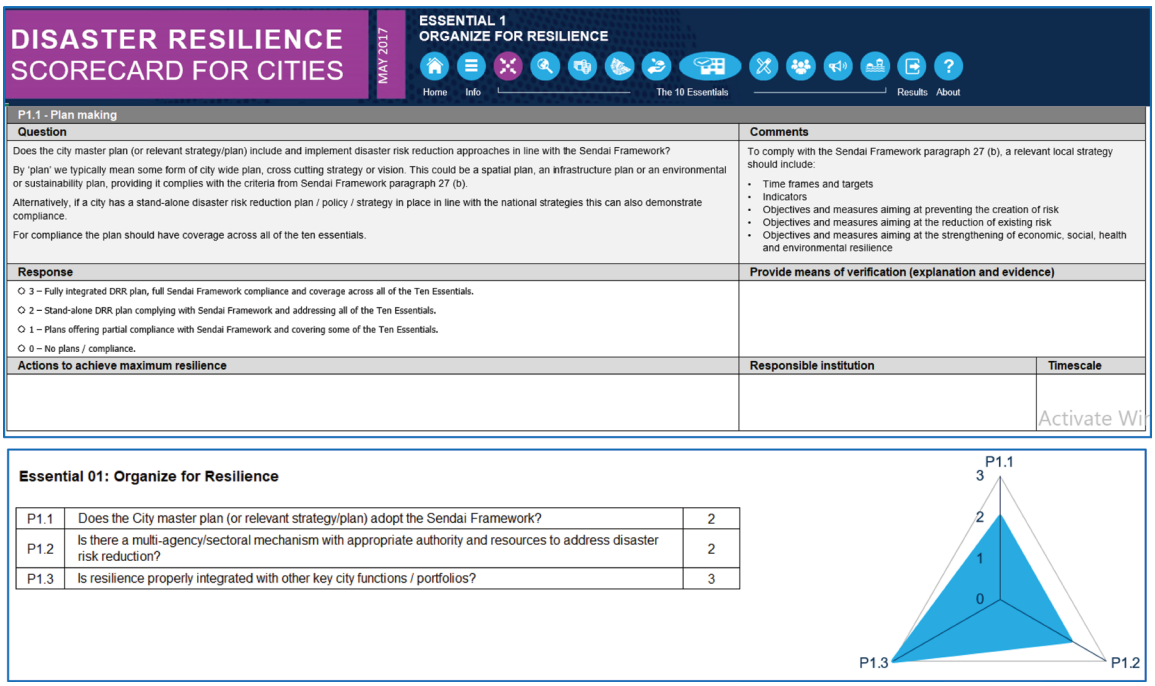


Figure 4. Preliminary Assessment Tool Page in MS Excel for E01.

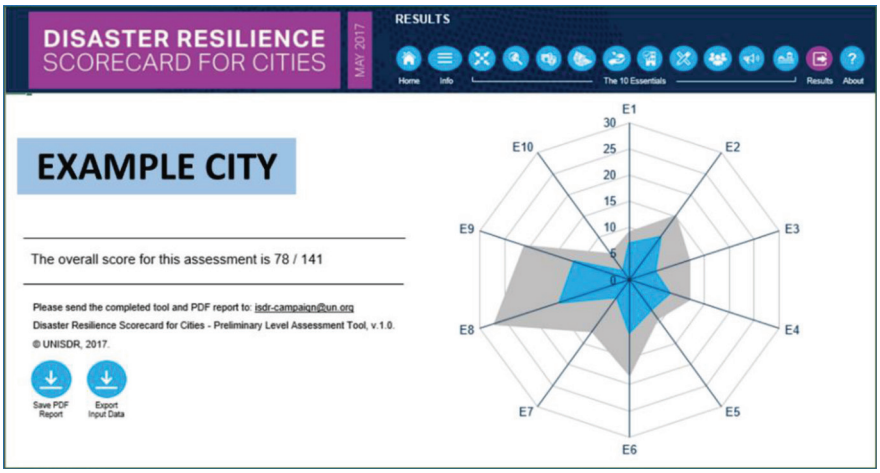


Figure 5. Scorecard of a City using the MCR Assessment Tool.

There are two sets of guides on Disaster Resilience Score Card for Cities – preliminary assessment which consists of 47 questions or indicators, each with a score of 0 – 3 and detailed assessment which consists of 117 indicator criteria, each with a score of 0 – 5.

To guide the user in the assessment, there are tools for both preliminary and detailed assessment in MS Excel which can be downloaded freely. Shown in Figure 4, is a page of the preliminary assessment tool for Essential 1. For Essential 1, there are actually three questions, with the first question as shown. Shown in the tool are comments that serve as a guide to the user on what factors and data are needed to answer reasonably the question.

The rating system for the preliminary assessment follows a scale from 0 to 3 described as follows:

- **3** = *Achieved (Documented, Implemented, Visible Outputs)*
- **2** = *Policies in Place but only Partially Achieved*
- **1** = *There is a plan (Proposal stage only)*
- **0** = *No idea or information*

After completing the assessment per essential, a summary represented by a radar chart is produced, similar to Figure 5 for Essential 01. After all essentials are assessed the final score card is summarized as shown in Figure 6 showing the scores for the 10 essentials. Using the final score, the city can identify the strengths and weaknesses in relation to the 10 essentials.

5. THE MAKING CITIES RESILIENT ASSESSMENT PROJECT AS A PROACTIVE EXPERIENTIALLEARNING ACTIVITY

Each group is required to choose a city or municipality in the Philippines as a case study in the application of the preliminary level assessment using the Disaster Resilience Score Card for Cities. Through internet research, site survey and interviews of local government officials and the community, the students must identify the strengths/weaknesses of the city in relation to the ten essentials. The final output of the project is a Disaster Resilience Score Card of the city. From there, they can recommend possible improvements to increase the city's resilience. The report must be supported with online reports, site surveys, interviews, city website information and official documents. A written and oral report is required for this project.

The three phases of the proactive learning paradigm is demonstrated in this group exercise.

1) *Instructor/learner fusion approach* – Students conduct research and apply the 10 Essentials for Making Cities Resilient
2) *Participation in a community of practice approach* – Students engage with various stakeholders in the community and in the local government as they conduct onsite inspection and assessment with respect to the 10 Essentials
3) *Long-term commitment evaluation approach* – The results of the MCR assessment have long term effects to the city while the students being familiarized now on the 10 Essentials can apply the principles and requirements for building resilient communities.

With respect to Kolb's Cycle of Experiential Learning, the MCR exercise shows the alignment the various students' tasks as shown in Figure 6:

a) *Concrete Experience*- The activity involves real world field work through site surveys and interviews (Figure 7) and online research (e.g., browsing the city's website, gathering news reports about the city),
b) *Reflective Observation* – The students record their observations at the site and reflect on them in relation to the MCR questions,
c) *Abstract Conceptualization* – The students interpret what scores to assign based on the

Figure 6. The MCR Activity as a Proactive Experiential Learning.

Figure 7. Students conduct interviews at the site.

observed strengths and weaknesses of the city with respect to an essential and

d) *Active Experimentation* – The students recommend improvements to the city to improve its resilience to disasters. The next cycle will follow after the preliminary assessment.

The radar score card for the essentials is presented in the reports. The score assigned for each essential were based by the group after assessing the documents, internet reports, website and site observations. The group as a team decides on the preliminary score. Figure 8 presents a sample report of a group on their assessment of a city with respect to the Ten Essentials, while Figure 8 presents the detail for the assessment of a specific essential with a summary of strengths and weaknesses with respect to an essential (e.g. Essential 09 in this figure.)

This activity addresses the course learning outcomes:

a) *The students must be able to identify and describe the various factors that affect the resilience of cities and communities to disasters*. By simply reading the "Ten Essentials for Making Cities Resilient" and analyzing the MCR Assessment Tool, the students get to know the important indicators that must be given importance by LGUs and stakeholders to make cities resilient. And when they visit the site to gather information, they observe and reflect on the deficiencies of the city with respect to the 10 essentials. They are made aware of the issues and problems in local government units that needs to be addressed.

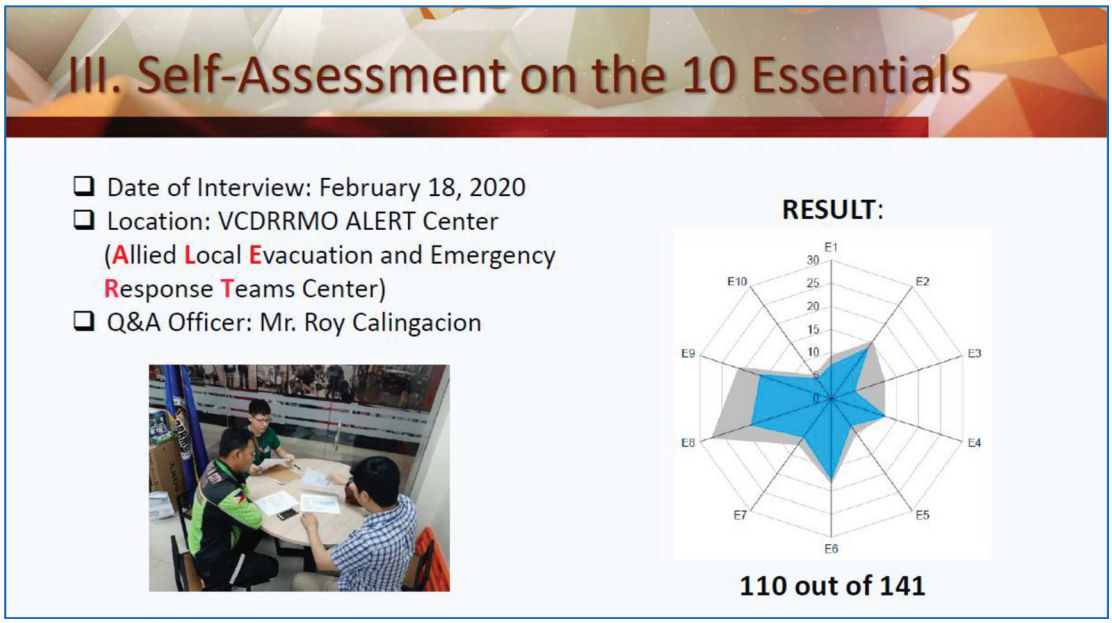


Figure 8. Students' Assessment of a City with respect to the Ten Essentials.

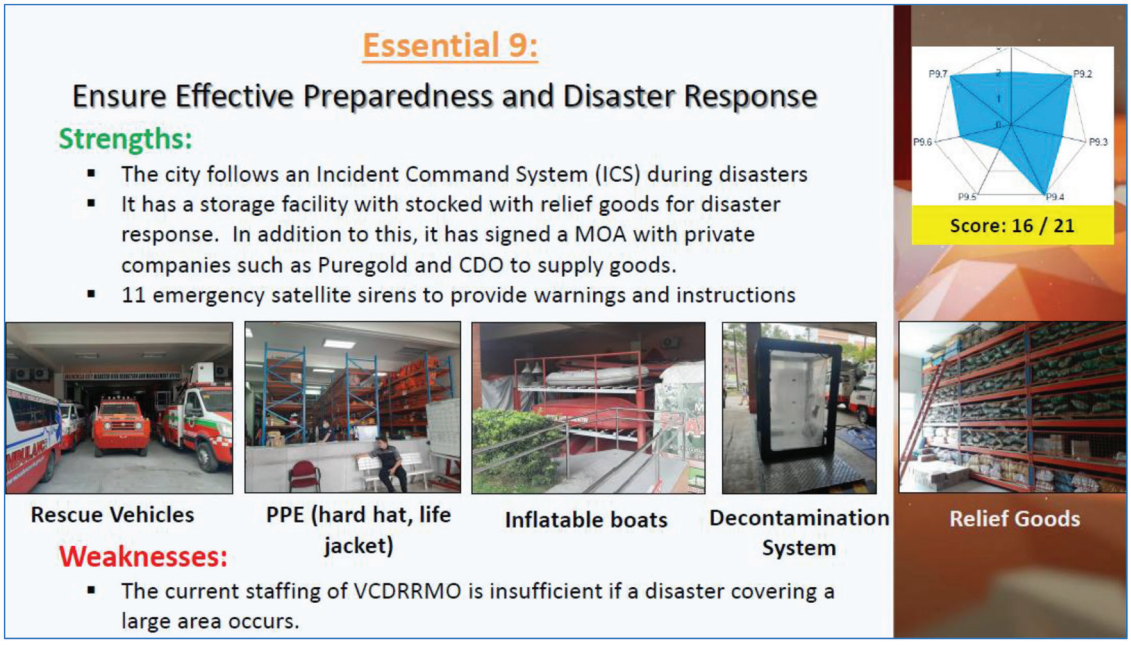
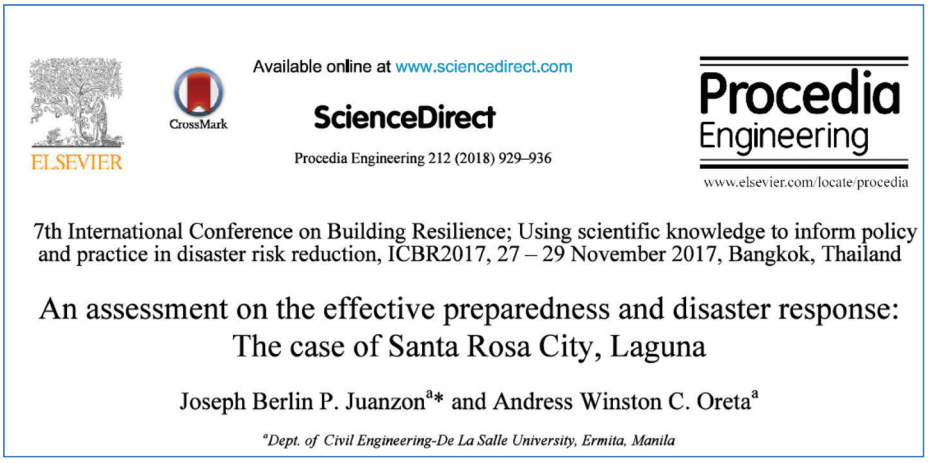


Figure 9. Students' Assessment of a City with respect to an Essential - E09.

b) *The students can apply their knowledge in the conduct of a preliminary disaster risk and resilience assessment of a city.* The onsite survey of the city, its infrastructures and the community, itself and the actual interviews of the LGU officers and the people provide factual information to the students on the actual situation in the city with respect to resilience using the ten essentials as a guide.

The UNDRR Making Cities Resilient framework is used in the DRRID graduate seminar since the Disaster Resilience Score card provides a comprehensive list of important criteria with guide questions that must be considered in the assessment of resilient cities to disasters. More focused researches can be conducted instead of considering all ten essentials. Research can be derived per theme like (a) Role of Governance in Resilience – E01, E02 and E03, (b) Physical, Environmental Social and Infrastructure Resilience – E04 to E08 and (c) Response Planning – E09 and E10. Actually, a comprehensive study can be conducted also for a city for a specific essential only, similar to the paper by Juanzon (Juanzon, J. B., 2018). The ten essentials for MCR and the tools provide useful and rich information for topics for research on resilient cities.



Available online at www.sciencedirect.com

ScienceDirect

Procedia Engineering 212 (2018) 929–936

Procedia Engineering

www.elsevier.com/locate/procedia

7th International Conference on Building Resilience; Using scientific knowledge to inform policy and practice in disaster risk reduction, ICBR2017, 27 – 29 November 2017, Bangkok, Thailand

An assessment on the effective preparedness and disaster response: The case of Santa Rosa City, Laguna

Joseph Berlin P. Juanzon[a]* and Andress Winston C. Oreta[a]

[a]Dept. of Civil Engineering-De La Salle University, Ermita, Manila

Figure 10. A paper about the MCR presented at ICBR2017 Conference (Thailand) (Juanzon, J. B., 2018).

Figure 11. Poster Presentation at the PAASE Conference 2024 (Philippines).

Best examples of the success of the DRRID graduate seminar are the paper/poster presentations about the MCR of the students in conferences. Among the significant papers presented by the students are as follows:

a) Joseph Berlin Juanzon (PhD student), *"An assessment on the effective preparedness and disaster response: The case of Santa Rosa City, Laguna,"* Procedia Engineering 212 (2018) 929–936, 7th International Conference on Building Resilience (7ICBR), Nov. 26-29, 2017, Bangkok, Thailand. See Figure 10 below.

b) Joseph Bianes (MSCE student). Co-authors: Dustin Glenn Cuevas and Earl John Salamat. "*Mandaluyong City Disaster Resiliency Assessment*," Poster presentation winner during the PAASE Conference, July 22, 2024, EVSU, Tacloban City, Hosted by the Philippine-American Academy of Science & Engineering (PAASE)

c) Mary JoaneAninon (PhD student) *"Assessing the Disaster Resilience of a City: The Case of Davao City, Philippines*," Poster presentation 3rd place during the PAASE Conference, July 22, 2024, EVSU, Tacloban City, Hosted by the Philippine-American Academy of Science & Engineering (PAASE). Figure 11 shows the students at the PAASE Conference with their posters and certificates.

6. CONCLUSION

The Graduate Seminar on Disaster Risk Reduction and Infrastructure Development (DRRID) is a pivotal course within the civil engineering graduate program at De La Salle University. Through the Making Cities Resilient

(MCR) Assessment, students gain practical, hands-on experience by applying their knowledge of disaster resilience in real-world settings. Using the UNDRR's Ten Essentials for Making Cities Resilient assessment tool, they conduct both on-site and online research to critically evaluate the role of these essentials in enhancing city resilience. This proactive experiential learning approach not only deepens their understanding of disaster risk reduction and resilience building but also equips them with the skills to integrate these insights into their professional careers as civil engineers. It is hoped that the graduate students will be inspired to explore innovative and sustainable strategies for mitigating the adverse effects of hazards while strengthening infrastructure and community resilience.

Acknowledgements

The author would like to express his gratitude to the editors and editorial staff of JHSSR for their assistance during publication period.

Funding

The authors received no financial support for the research.

Declaration of Conflicting Interests

The author declares that he has no competing interests.

REFERENCES

DLSU Graduate Studies, Civil Engineering. https://www.dlsu.edu.ph/colleges/gcoe/academic-departments/civil-engineering/graduate-studies/

Nakano, Genta and Yamori, Katsuya (2021). *Disaster risk reduction education that enhances the proactive attitudes of learners: A bridge between knowledge and behavior*, International Journal of Disaster Risk Reduction 66 (2021), Available online 4 October 2021, Published by Elsevier Ltd.

King, William – Editor (2012). *Teaching Disaster Risk Reduction with Interactive Methods*, ISBN 978-9941-0-3440-4, National Curriculum and Assessment Centre, funded by the European Commission Humanitarian Aid and Civil Protection and implemented jointly by the Ministry of Education and Science of Georgia, National Curriculum and Assessment Centre, Emergency Management Department of the Ministry of Internal Affairs of Georgia and UNICEF.

Kolb, Alice and Kolb, David et al. (2017) *Experiential Learning Theory as a Guide for Experiential Educators in Higher Education*, A Journal for Engaged Educators, Vol. 1, No. 1, pp. 7–4400, 2017 Southern Utah University Press.

Kerhsaw, et al. *Design and Implementation of Experiential Learning Modules for Geotechnical Engineering,* 2021 ASEE Annual Conference, American Society for Engineering Education, Paper ID #33046, July 26-29, 2021.

Lovell, et al. *Design and Implementation of Experiential Learning Modules for Reinforced Concrete,* 2021 ASEE Annual Conference, American Society for Engineering Education, Paper ID #32757, July 26-29, 2021

Caroll, et al. *Design and Implementation of Experiential Learning Modules for Steel Design,* 2022 ASEE Annual Conference, American Society for Engineering Education, Paper ID #37899, June 26-29, 2022

UNDRR, The Ten Essentials for Making Cities Resilient. https://mcr2030.undrr.org/ten-essentials-making-cities-resilient

UNDRR, How To Make Cities More Resilient - A Handbook For Local Government Leaders, Geneva, 2017 version

UNDRR, Making Cities Resilient Scorecard. https://mcr2030.undrr.org/disaster-resilience-scorecard-cities.

Juanzon, Joseph Berlin. *An assessment on the effective preparedness and disaster response: The case of Santa Rosa City, Laguna,* Procedia Engineering 212 (2018) 929–936, 7th International Conference on Building Resilience (7ICBR), Nov. 26-29, 2017, Bangkok, Thailand.

Biographical Statement of Author(s)

Andres Winston C. Oreta is a Professor in the Structural Engineering Division of the Department of Civil Engineering at the Gokongwei College of Engineering, De La Salle University (DLSU), Manila, Philippines. He holds a Doctor of Engineering (1994) and a Master in Engineering (1991), both in Civil Engineering from Nagoya University, Japan. He earned his Bachelor of Science in Civil Engineering (BSCE) degree in 1983 from the University of the Philippines, Diliman.

Dr. Oreta is an active member of the Disaster Resilience Unit under the DLSU Center for Engineering and Sustainable Development Research (CESDR). He has served as a consultant to the United Nations International Strategy for Disaster Reduction (UNISDR), contributing to the conceptualization and development of the "One Million Safe Schools and Hospitals Campaign" website. He co-organized the Newton Fund Workshop on "Localising Strategies for Making Cities Resilient to Disasters" in collaboration with the University of Huddersfield in Manila.

His research collaborations include projects with University College London, notably the *Philippines Resilience of Schools to Multi-Hazards (PRISMH)* and *Cultural Heritage Resilience and Sustainability to Multi-Hazards (CHeRiSH)*. He has played leading roles in organizing national and international conferences of the Association of Structural Engineers of the Philippines (ASEP), including the Asia Conference on Earthquake Engineering (ACEE).

Dr. Oreta is a Life Member of the Philippine-American Academy of Science and Engineering (PAASE) and a Founding Member of the Philippine Academic Society for Climate and Disaster Risk (PASCDR).

Professor Andres Winston C. Oreta
Department of Civil Engineering
STE Division
De La Salle University
Manila, Philippines
Nigeria
E-mail: andres.oreta@dlsu.edu.ph