INTERNATIONAL COLLABORATION ON DISASTER RISK REDUCTION THROUGH INCIDENT COMMAND SYSTEM (ICS) WORKSHOP

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ABSTRACT

The community service aims to increase people's knowledge of disaster risk reduction and introduce standardized procedures for responding to emergency situations, such as a fire. A collaborative project was conducted by the Chiba Institute of Science (CIS) in Japan, the National Research and Innovation Agency (BRIN) in Indonesia, and the Budi Luhur University (UBL) in Indonesia. This is not the first time the three parties have conducted a program together. This year, the collaborators improved many aspects, particularly the use of ICS in drills and the simulation of disaster areas. In addition to the two new components of the regular training, two new topics were added to enrich the discussion and discourse, as UBL's strength lies in information technology. The program was designed to provide benefits to UBL's internal stakeholders (lecturers, staff, and students), as well as its partners, such as Budi Luhur High School students. Around 100 participants joined and showed optimism. The results show a positive response to the knowledge received, especially regarding the success of conducting the standardized drill without significant obstacles. Regularly organized trainings are imperative to preserving knowledge about disaster risk reduction and to prompting proper responses and procedural measures during emergency and crisis situations.

Keywords: Disaster Area, Disaster Risk Reduction, Fire Drill, ICS, Jakarta

1. INTRODUCTION

Universitas Budi Luhur and Budi Luhur High School are two educational institutions located in Jakarta and Tangerang, respectively. Both are located near the Sunda Strait subduction zone where the Eurasian and Indo-Australian plates meet (Santi et al., 2021). This means that both provinces and the institutions are prone to potential earthquakes. As they are located in highly populated areas of Jakarta and Tangerang, the institutions are also prone to fire incidents due to short circuits, human error, or earthquakes that destabilize the electrical current.

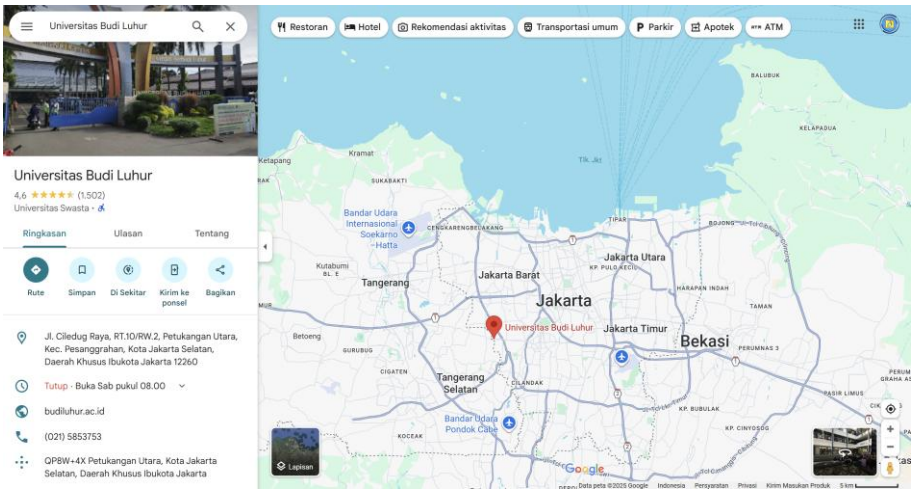

Figure 1. Location of Universitas Budi Luhur

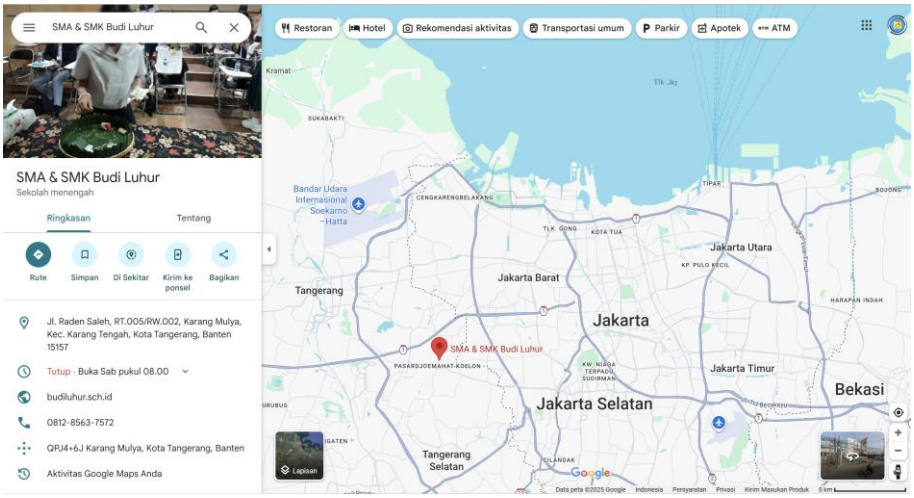

Figure 2. Location of SMA Budi Luhur

To increase society's preparedness to face disasters and other incidents, Universitas Budi Luhur has not only established a Disaster Management Study Program, but also formed national and international partnerships to support this cause. One such cooperation is international joint research and community service, which was initiated soon after the program's establishment, in collaboration with the National Research and Innovation Agency (Badan Riset & Inovasi Nasional) and the Chiba Institute of Science in Japan. Prior to this years' service, several workshops on evacuation drills and kamishibai (a disaster risk reduction education method used in Japan that involves manual visual narration) have been conducted for lecturers, staff, and students at Universitas Budi Luhur. Some workshops have involved high school students, and one has involved an international audience through live streaming. Last year's event even utilized a drone to capture the evacuation process, enabling the identification of disaster areas in real time for a prompt response by authorities or competent civil society organizations (CSOs) (Tanaka et al., 2025). However, there is always room for improvement with the same or different communities of participants.

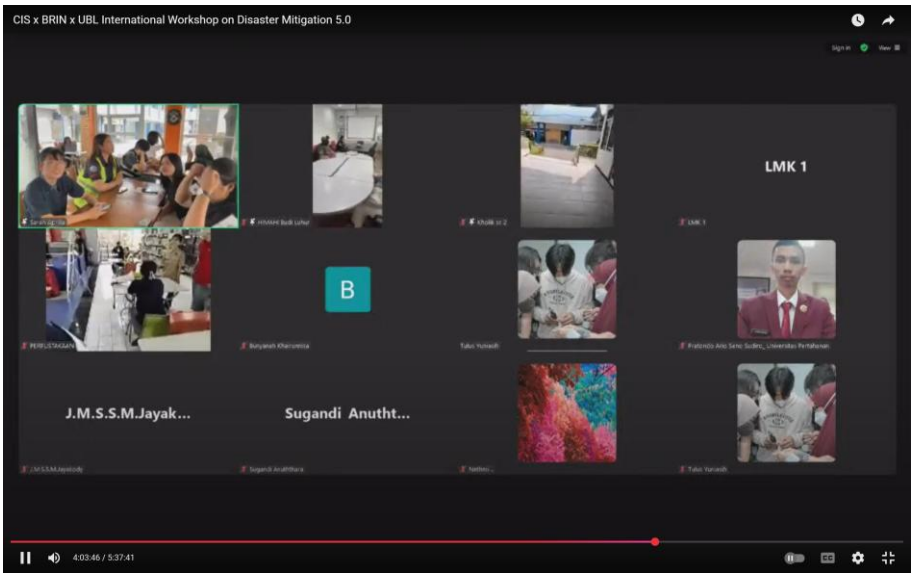

Figure 3. Collaborative Evacuation Drill in 2024, attended by international audience

For the joint community event in 2025, improvements were made to increase the capacity of partner institutions and participants to implement a higher level of evacuation standardization, namely, an international standard. The Incident Command System (ICS) is one measure applied during times of crisis (ICS Canada, 2016). This organizational and procedural standard focuses on establishing the command elements imperative to an incident situation. The ICS is applicable not only to natural disasters, but also to other types of incidents. The ICS is the minimum standard for

situations that lead to a crisis requiring an emergency response and intersectional collaboration. Indonesia has adopted this system for years (BNPB, 2008). Adoption should be followed by proper dissemination, meaning mainstreaming inclusive disaster risk reduction education (DRR). In this regard, Universitas Budi Luhur, in collaboration with the Chiba Institute of Science in Japan and the National Research and Innovation Agency (BRIN), has taken the initiative to hold a workshop on standardized evacuation drills. The workshop will include participants of different ages, professions, and educational backgrounds from educational institutions. The workshop spanned two days and included a kamishibai workshop. However, this article will focus only on the collaboration event on Day 1 regarding the service in ICS implementation.

2. METHOD

Education on disaster risk reduction (DRR) among members of educational institutions has been seen as crucial. Previous research has shown the importance of routine evacuation drills and integrating DRR into the curriculum. However, the experts from the Chiba Institute of Science in Japan are only available for a limited time. Therefore, the main objective of the recent collaborative community service was to demonstrate the importance of implementing a standardized procedure during a crisis that is time-efficient. In this regard, the activities and main method of this international joint community service were a one-day basic training or workshop consisting of the dissemination of ICS, a three-way simulated evacuation situation, and a presentation on additional related materials.

Several stages were completed prior to the workshop day. Coordinating and preparing were essential to achieving the service's goals and ensuring that it would benefit the intended audience and society at large. Since early 2025, professors, graduate students, and management officials of the three co-hosting collaborators have been holding and attending online meetings intensively. During the preparation stage, they exchanged online documents related to the materials and other administrative requirements, as well as video recordings of the evacuation drill route plan. Language barriers have always been a concern in international collaborations (Be´lizaire et al., 2024). Currently, the three institutions have chosen English as the primary language of communication. However, proficiency in both Japanese and Bahasa Indonesia has also proven effective during coordination, preparation, and running the workshop. This underscores the importance of carefully allocating human resources for team formation. Disaster risk reduction is not exclusive to the disaster management society. An interdisciplinary approach should be prioritized to attain optimum results in educational dissemination (Matsura & Razak, 2019). As the University has previously executed, the workshop involves the participation of managers from various academic backgrounds. The Disaster Management Study Program has always been central to this issue. However, the success of the education itself depends on viewing the issue as inclusive, indiscriminate, and interconnected globally. It can affect anyone and, most importantly, result in lengthy and tremendous negative impacts. Therefore, the success of the education program depends on a collaborative effort with other disciplines and sectors. Integrating other perspectives will encourage a more comprehensive and appealing effort for the target audience. For the interdisciplinary, one-day workshop on ICS, Universitas Budi Luhur arranged for collaboration between disaster management and international relations professionals.

This approach enriches the perspective and resources for providing effective measures to fulfill the objective of the service. An international relations perspective would strengthen international, transnational, and interpersonal aspects of disaster management by integrating a post-development and constructivist approach. It would also encourage more inclusive yet strategic execution of the interdisciplinary collaboration model. Involving a range of expertise would promote a people-centric approach to this issue (Collins, 2018). Therefore, this workshop involves not only academics and practitioners from the School of Risk and Crisis Management at the Chiba Institute of Science in Japan and a research professor from the National Research and Innovation Agency, but also lecturers and students from the International Relations and Disaster Management study programs. The community service team also invites lecturers, staff, and students from different backgrounds at the university, including IT, economics, business, engineering, communication, and visual design. They are invited not only as participants but also, most importantly, as discussants. Such a setting is in line with the spirit of building and proliferating more inclusive, sustainable living. Every element of society, with its own expertise and knowledge, should be able to contribute to the construction of a modified or new design of a feasible civil society model. Based on last year's results, to ensure the effectiveness of the program, the service team should be supported by an interpreter who is fluent in Japanese, Bahasa Indonesia, and English.

To attain the effectiveness of educating on topics important to comprehending ICS and conducting a simulated evacuation drill within a limited time frame, the aforementioned methods are applied as follows:

1) A simulated evacuation drill will be conducted twice.
2) A presentation about ICS will be given between the two simulations to improve participants' understanding of the importance of ICS applications during times of crisis.
3) An analog simulated disaster area will be conducted right after the second drill.

4) A presentation on the utilization of drones in ICS applications will be held after the second drill to demonstrate the benefits of integrating drone technology into the disaster area identification process.
5) A presentation on the challenges of disaster areas in terms of disease occurrence will be given last.
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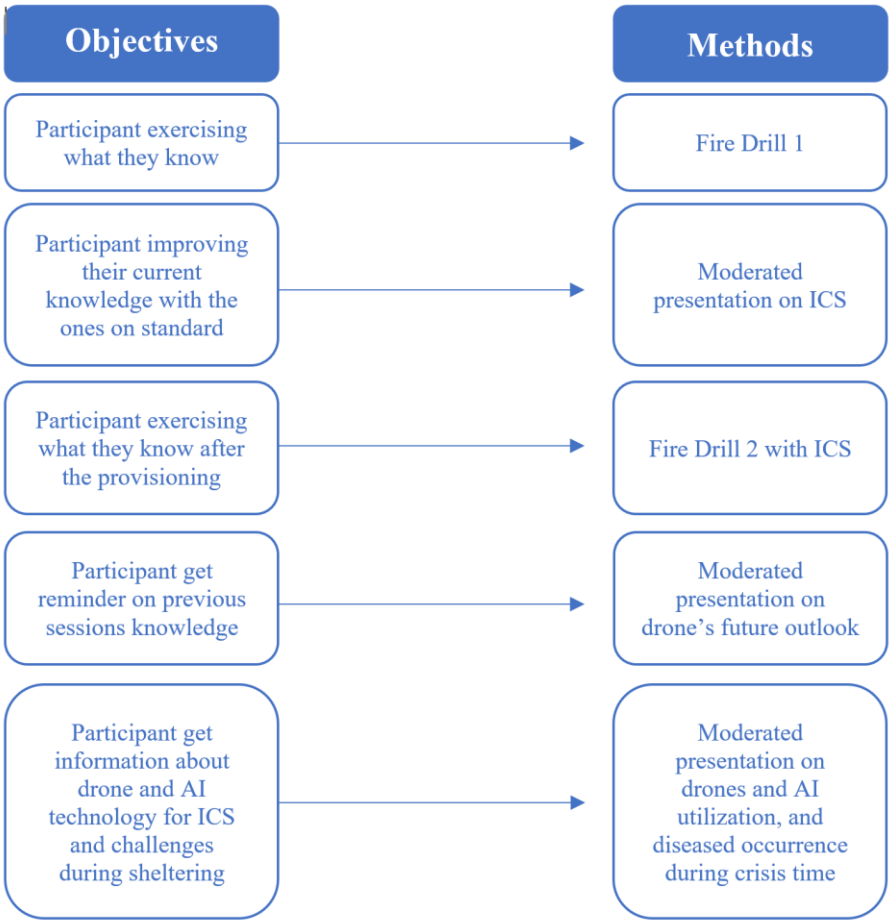

Figure 4. Justification of Methods

The workshop, which is intended as basic training, is set to start in a theatre room located on the top level of one of the central buildings on campus. This room has an amphitheatre-style seating arrangement, an LED screen, and a high-quality internet connection, as well as other features that support the training. The theatre's facilities and location support not only presentations or dissemination of important ICS information, but also discussions, preparations, and briefings for evacuation drill simulations, post-testing, and, most importantly, setting up a mock Incident Command Post (ICP). During last year's simulation, the evacuation drill took place in five different locations (rooms, offices, and areas that represent where university members conduct their daily routines). The theatre room served as a control room where professors could make assessments. Based on that experience, the same setup was used this year. However, due to the tight schedule, modifications were made. The number of locations was minimized to one: the theatre room. The number of participants was also significantly limited to 30 people. The disaster area simulation venue will be located in a ground-level classroom, secluded from the drill participants but near the assembly point.

3. RESULTS AND DISCUSSION

Prior to the workshop day, the collaborative team allocated a day for the final survey and rehearsal of the training. The three-party survey and discussion were imperative to ensure there was no misinterpretation of the conduct, especially given the language barrier in the international joint program. Reserving a day for this task enabled the team to provide additional logistics if modifications were needed.

Figure 5. D-1 final preparation and briefing

In this case, no significant modifications were needed. There are prerequisite conditions that must be met for the future practice or implementation of any collaborative program. This was the second drill held by the three collaborators; therefore, the CIS team was familiar with the program area. The host committee, the collaborative IR and Disaster Management team, has also participated in previous drills. This has become a driving force for intensive online coordination and the exchange of preparation documents and videos. Future continuations and improvements should consider these factors during the preparation phase.

Basic ICS training was held on September 2, 2025, at Universitas Budi Luhur in Jakarta. Presentation sessions were held in the theatre room. The simulated evacuation drill was conducted with the theater room as the starting point. The assembly point was located outside the building where the theatre room was. The simulated disaster area was developed in a classroom on the ground floor, on the other side of the building, and the stairs were used for the evacuation process. Around 100 lecturers, staff, and students from the university and high school participated in the training.

Figure 6. The ICS Basic Training by Instructor

(background: Budi Luhur High School students)

The workshop began with the standard protocols for the bilateral set. The Head of the IR Study Program and the Head of the CIS Delegates gave opening remarks to explain to the participants the importance of learning and understanding how to respond to crises. Preparedness can save lives and reduce risks within communities. After the opening ceremony, the community service conducted a moderated ICS training. The main instructor began by sharing the objectives of holding drills twice.

Figure 7. Instructors Explain Significance of ICS and Lead the Scenario Set-up to Audience

Next, the team explained the scenario prepared for the simulation. Since all participants were Indonesian, the fire drill was led in Bahasa Indonesia. Incidents often occur without warning, and the worst case is possible. For example, not all rooms have two or more exit points. Therefore, the training scenario involved an emergency situation in which a large number of people were inside a room with only one exit, on the west side of the building. The fire was set to start on the second floor on the west side of the building. Since the room was on the fourth floor, evacuating people would have to pass through an area with fire and smoke to reach the safe assembly point. The team instructed the 30 drill participants that, in this situation, they should take the stairs on the east side to avoid the area of the fire. Since last year's drill, the drill has been streamed live on Zoom and displayed on the theatre's LED screen. To promote the dissemination of ICS knowledge to the public, the live stream has been connected to the UBL YouTube channel since last year. The "control room" in the theatre received feeds from the media laboratory as part of the committee setup and from the organizing committee's mobile phones.

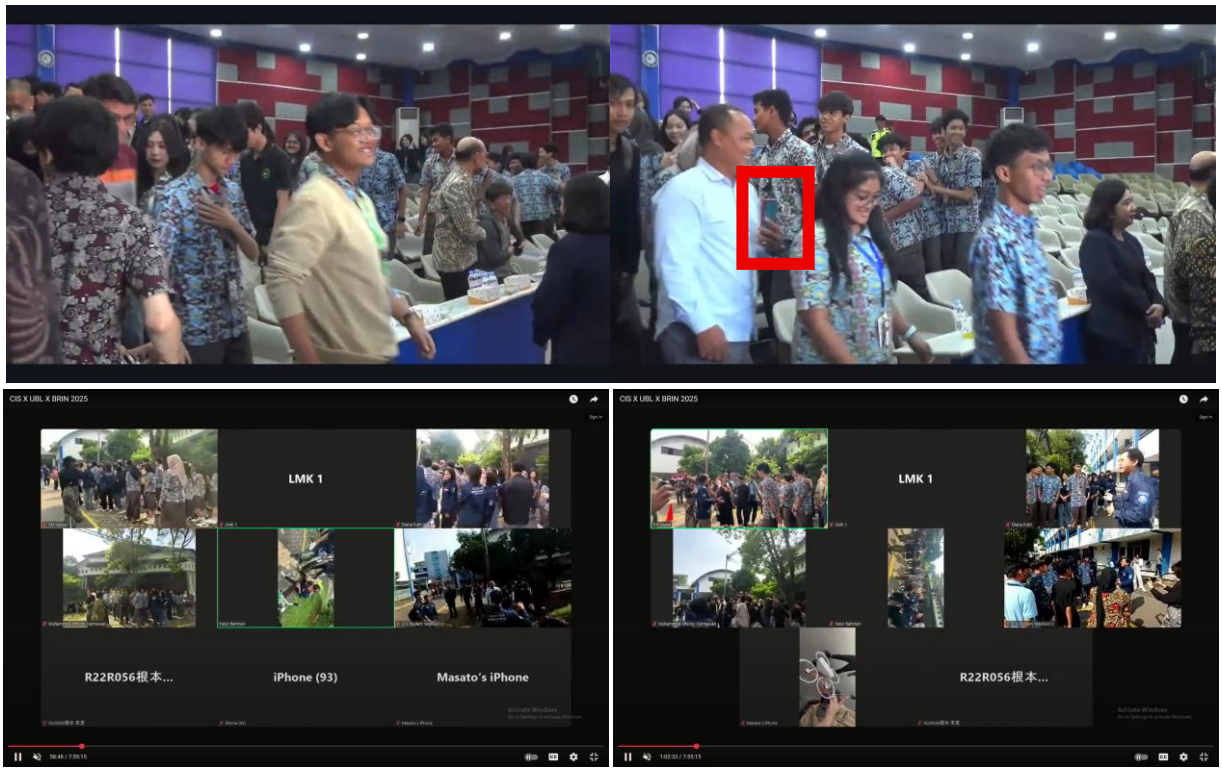

Figure 8. First Fire Drill
(Red box on the upper right picture shows the mobile brought by participants to capture evacuation process)

Using the live-streaming method, professors in the control room could also see how participants responded to the first fire drill. They observed the participants as they evacuated the theatre room and reached the assembly point. After resting for a while, the participants were asked to return to the theater.

Soon after, the instructor explained ICS. The presentation covered the challenges that arise during an incident, how to establish ICS, and the crisis-facing skills that have been lost over time due to advancements in human life. It also covered how to implement ICS in schools. These explanations were followed by a post-test and a second drill session.

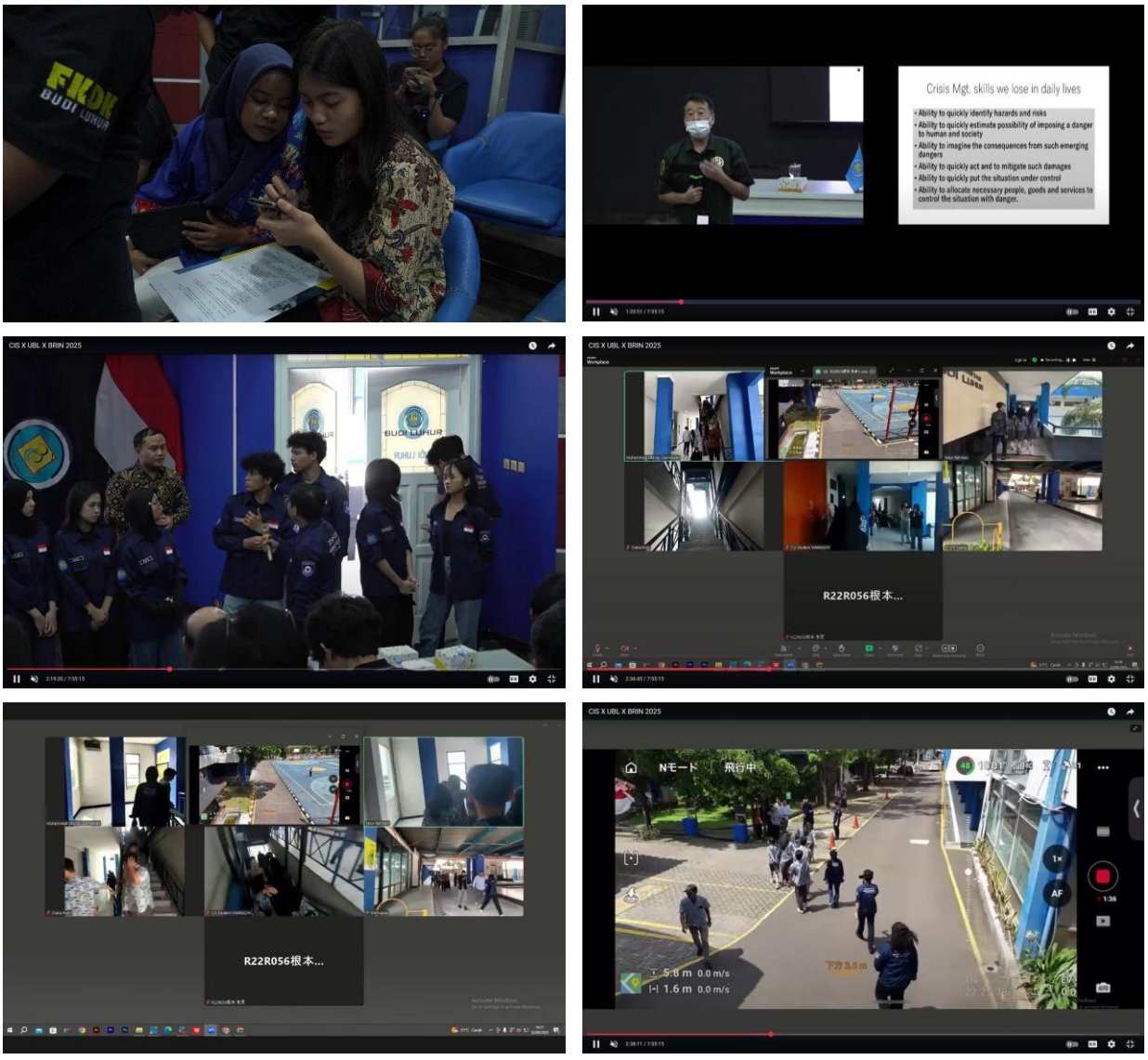

Figure 9. Second Fire Drill

During the second drill session, the Disaster Management team, consisting of a lecturer and students, led the establishment of the command system. The simulated system was designed to be gender-sensitive to accommodate participants who preferred a leader of the same gender. The scenario setup also covered incidents that occurred during evacuation, such as burn accidents.

After a while, the next simulation, the disaster area simulation, was conducted. This new simulation was introduced to give participants more time to understand the ICS materials previously given on how to perceive and respond to a disaster area properly.

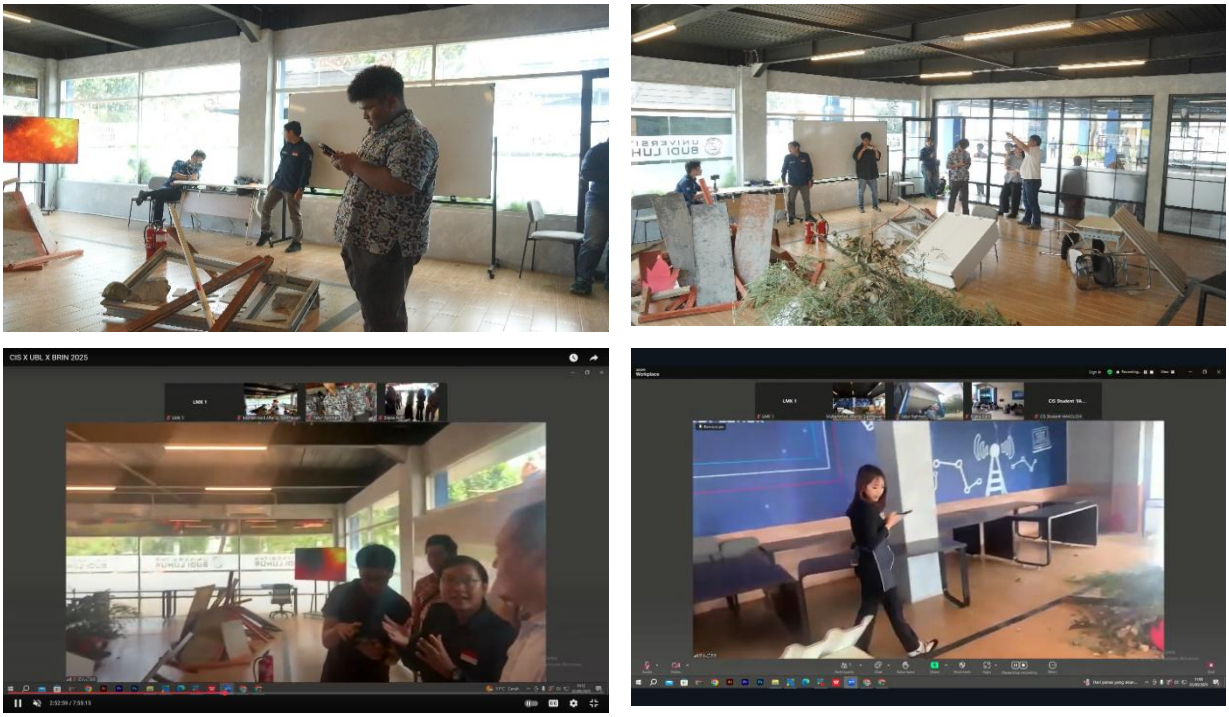

Figure 10. Disaster Area Simulation

From the conduct, the result shows that the participants were able to possess a considerably good comprehension on ICS application as well as capability to be more aware on disaster area dynamics.

To complete the understanding of how human can utilize science and advance technology during crisis time, after break, the training was continued with explanation on drone and AI's future outlook in ICS and education on diseases occurrence during emergency and crisis situation. The instructor explained and showed examples how current technology developed on drones had enabled a prompt support in terms of identification of elements in disaster area such as fire or survivor detection, or even volcanic eruptions and flood zones. This, in results, may encourage a faster response by decision maker for a better rescue mission and other measures needed on field. The discussion on this topic was particularly fruitful. Universitas Budi Luhur has been long well-known for its tenacious effort in providing development services to communities in many parts of Indonesia. Universitas Budi Luhur's strength is also in information technology.

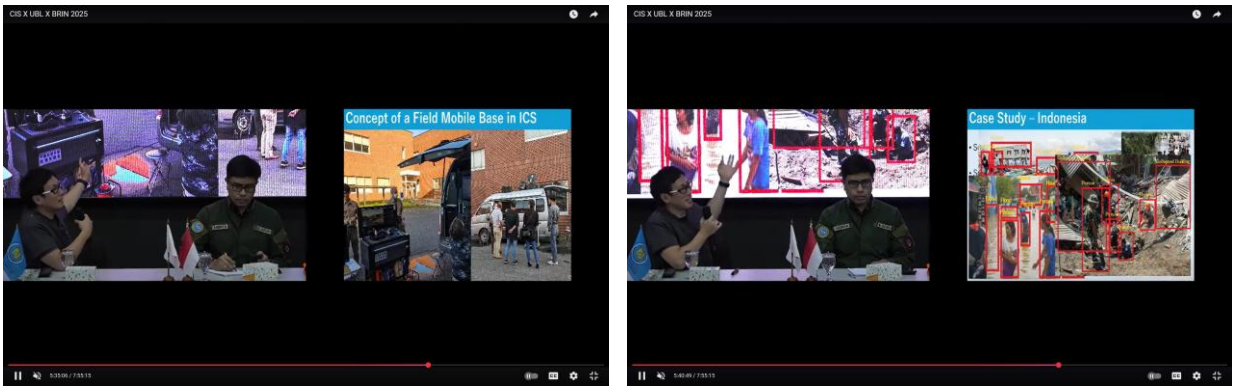

Figure 11. Session on Drones, AI, and Health Issues

On health topic, the instructor gave a deep understanding on how evacuation shelters were prone to diseases. However, some diseases might also root from unhealthy life-style. Therefore, practicing healthy life-style might help to reduce the likelihood of the occurrence and spreading of diseases during crisis time, especially when the evacuation shelters cannot be as sanitized and proper as in resourceful normal time. The workshop on ICS ended at health topic. As appreciation for passing the post-test, and active participation during the disaster area simulation, the participants were awarded the certificate of basic training on ICS on-site.

Figure 12. ICS Basic Training Certificate Awarding

4. CONCLUSION

The community service program should be one of the fundamental backbones of sustainable development. In this case, Jakarta and Tangerang Selatan, two densely populated areas, are prone to incidents, including fires. A collaborative effort should be conducted regularly, not only to remind people of the importance of increasing their capacity to mitigate incidents or disasters, but also to train people to embody this capacity to the fullest. Basic ICS training to reduce risk during emergencies and crises is therefore imperative, including for those in the education sector. The dissemination of evacuation standards, strengthened by knowledge of advanced technology such as drones and AI, as well as knowledge of challenges at disaster sites, such as the occurrence of diseases in shelter complexes, adds to information about disaster risk reduction. It adds value to the training. Participants and other audience members watching via the live streaming link will be able to discuss and propose ideas and create innovative solutions to problems during any emergency situation.

ACKNOWLEDGEMENT

This community service cannot be held and attain its success without the contributions of related units and partners. Therefore, the topmost appreciation is given to Chiba Institute of Science (CIS), Badan Riset & Inovasi Nasional (BRIN), Universitas Budi Luhur (UBL), and Budi Luhur High School (BLHS) for funding, facilities, presence, and hard work. The workshop cannot be held without the tremendous support from CIS' professors and students, BRIN delegation, and UBL & BLHS' management, staff, and students. Collaborative team also lengthen the gratitude to Budi Luhur Cakti Foundation, and special regards to the Transportation Unit, the IR Student Association, and the interpreter for immeasurable assistance during the emergency time in Jakarta prior to the workshop date.

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