

Disaster Risk Reduction Education for International Students through Inter-University Collaboration

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Abstract: Disaster Risk Reduction Education is a core pillar for reducing vulnerability and increasing capacity for dealing with disasters. Many international students coming to Japan have little or no prior DRRE exposure in their home countries. In order to empower international students to deal adequately with disasters, targeted DRRE effort is needed in higher education. This paper reports on a newly established DRRE course at Nagoya University implemented in collaboration with Tohoku University, looking at some of the challenges and discussing available opportunities that could be leveraged in promoting adoption and delivery of DRRE to international students in Japanese institutions of higher learning.

Keywords: International Students; Disaster Risk Reduction Education; Inter-University Collaboration

Table of Contents

Abstract

Keywords

1. Introduction

2. DRRE and International Students

DRRE in Japan

Vulnerability of International Students

Overview of DRR Activities at Nagoya University

3. The new DRRE Course at Nagoya University

Course Overview

Collaboration between Nagoya University and Tohoku University

4. Challenges and Opportunities

On introducing a new Syllabus into the curriculum

On Course Delivery and Multidisciplinary Content

On utilization of Videoconferencing System

On Inter-University Collaboration

On the need to engage the wider student body

5. Conclusion

Bibliography

1. Introduction

The critically important role played by Disaster Risk Reduction Education (DRRE) in society has been repeatedly reaffirmed¹ in international forums over the years including in the just concluded UNESCO World Conference on Education for Sustainable Development (November 2014, Nagoya) and the third UN World Conference on Disaster Risk Reduction/ UN-WCDRR (March 2015, Sendai). One of the priorities for action mentioned in the Sendai Framework for Disaster Risk Reduction 2015-2030 focuses on DRRE:

“Promote the incorporation of disaster risk knowledge, including disaster prevention, mitigation, preparedness, response, recovery and rehabilitation, in formal and non-formal education, as well as in civic education at all levels, as well as in profes-

¹ For example, a UNISDR (United Nations International Strategy for Disaster Reduction) report ‘Regional analysis on disaster risk reduction (DRR) education in the Asia Pacific region’ explicitly states that “...it is now beyond the discussion stage that integrating DRR into the education system is essential and it should be done from different angles and on different fronts” (Tran 2009).

sional education and training” (WCDRR 2015).

Japan, the host of the above and many other international forums on DRR, is deservedly considered one of the most disaster resilient countries. In Japan, DRRE is considered a core pillar for reducing vulnerability and increasing capacity for dealing with disasters. With most of its populated areas under constant threat from different forms of extreme natural hazards, a deeply ingrained DRRE culture and focused attention on the research and development of advanced DRR oriented technology for utilization in all facets of society has been nurtured over centuries of struggle with natural hazards. While this has not made Japan immune, as witnessed through recent large scale disasters, its resilience is still evident from the relatively mild impacts of frequent and potentially devastating natural hazards (e.g. earthquakes, typhoons, heavy rain, volcanic activities, etc.) which in countries with less preparedness would have been catastrophic.

Disaster impacts concentrate on the most vulnerable, the exposed, and those with relatively lower coping or adaptation capacity within a community. This include the poor, the sick, the aged and, for various social reasons, minority members of a community which include foreign residents and international students. In regards to international students in Japan, most of them come to study at the tertiary level, with a great number having little or no prior DRRE exposure at their home countries. Targeted DRRE effort is needed in higher education in order to empower international students to deal adequately with disasters.

This paper reports on a newly established DRRE course, which is one of various efforts at Nagoya University to increase disaster resiliency. This pioneering course was conducted as a collaborative effort between two universities, Nagoya University and Tohoku University. To the

best of our knowledge, no university in Japan has yet introduced a credit earning English taught DRR course in its general undergraduate curriculum. Despite the challenges faced during this first attempt, the course provided a valuable learning opportunity not only to the students, but also to the participating faculty members on how DRRE delivery to international students can be improved. The paper gives an overview of this new DRRE undertaking, and describes some of the experience gained drawing from the views of the authors, who jointly served as coordinators or lecturers in the course, as well as perspectives gleaned from student feedback.

2. DRRE and International Students

DRRE in Japan

In Japan, DRRE is incorporated into the primary and secondary level curriculum². Furthermore, regular preparedness and disaster awareness activities are conducted on the community, company or institution level³. The DRR culture gained and nurtured in primary and secondary level education, and consolidated through the widespread community-based disaster preparedness activities contribute to Japan’s resiliency. These DRRE efforts have been widely documented as having contributed fundamentally to the saving of human lives both directly and indirectly during large scale disasters. Stories on how DRRE helped students (including those in elementary schools) make appropriate lifesaving responses during disasters abound. For example, “The Miracle of Kamaishi” is a story of how 3,000 students survived the Tohoku Earthquake and Tsunami due to the rigorous disaster prevention program at their schools in Kamaishi City, Iwate Prefecture (Sawaji 2012).

On the other hand, tertiary education institutions in Japan have more autonomy (Higher Education Bureau - MEXT n.d.)⁴, including in the design of their curriculum. Therefore, unlike in the Primary and High School curric-

² Ministry of Education, Culture, Sports, Science, and Technology of Japan (MEXT) prescribes the curriculum from Kindergartens to Senior High Schools (Komatsu 2002).

³ Examples of these activities are described in a report on Disaster Education (Chinoi 2007).

⁴ See also (NIER n.d.) , (Howard Newby 2009) and (Poole 2003).

ulum where DRRE is well-established, DRRE adoption in higher education exists in various forms ranging from specialized degree programs⁵ and non-degree certificate programs⁶ (mainly aimed at educating professionals who will later serve in careers related to Disaster Management), to ad hoc activities such as disaster evacuation drills and preparedness seminars meant to increase DRR awareness among the general student body. The lack of uniformity in DRRE in higher education in Japan might not be of much consequence to someone with a firm DRRE foundation gained from the primary and the secondary level. However, in regards to international students, this is a critically important aspect of DRR that needs urgent attention.

Vulnerability of International Students

Vulnerability is a key concept used when describing risk or the susceptibility to injury or damage. Risk is the likelihood that a hazard will turn into a disaster and is usually shown by the equation [Risk = (Hazard × Vulnerability × Exposure) / Capacity] (Cardona, et al. 2012). When determining the risk presented by an existing ‘Hazard’, vulnerability at times embodies the ‘Exposure’ to the hazard and the ‘Capacity’ of an individual to anticipate, cope with and adapt to disaster impacts. Wisner et al (2003) defines vulnerability as “the characteristics of a person or group and their situation that influences their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard”. Risk increases with an increase in vulnerability and exposure to hazards, but decrease with increased capacity.

Different groups of people have differing susceptibility to hazards. Some factors that have been presented as contributing to such differences include economic status, social status, health/disability, immigration status, social network extent, etc. (Wisner, et al. 2003). And more specifically, language barriers, cultural differenc-

es, familiarity with local environment, prior disaster experience, social networks and financial burden are given as explaining the vulnerability of international students (Xueqin 2007).

Language barriers severely impair the ability to get information, to react, to seek help or to help others effectively in times of disasters. In Japan, where Japanese is the main language, the fact that most DRR related information is provided in Japanese is a big factor contributing to an inadequate access to DRR information among international students. Even for critical disaster related information, such as early warning, language forces many international students to depend on friends to get and understand potentially life-saving information. Language also creates a barrier to building useful social networks with others in the local community (Gomez 2013).

International students to Japan come from different social and cultural backgrounds and their knowledge and understanding of DRR is unlikely to be on the same level, or tuned to local hazards that someone raised in the DRRE conscious education system in Japan might be accustomed to. In addition, for socio-economic reasons, international students might opt to rent older apartments due to cheaper rent or an existing social network of international student friends living in the same building. Many of these old buildings do not meet latest building codes⁷. All these and many other reasons combine to place international students at a position of relative vulnerability to disasters.

Many of the students taking the new DRRE course at Nagoya University had never had any formal DRRE exposure. And as can be read from some of the course student’s comments, some of the information international students have about disasters are inaccurate or

⁵ For example, the Disaster Management Policy Program at the National Graduate Institute for Policy Studies (GRIPS n.d.), Tokyo.

⁶ Example is a Non-degree course on Disaster Management and Humanitarian Affairs offered at the United Nations University (UNU), Tokyo.

⁷ In Japan, building codes are updated after major earthquakes and have been shown to be effective in curbing property damage and most importantly protecting lives (Tatsuo and Mikio 2012).

false, and that since there has not been a major disaster in Tokai area in recent times, many students might be feeling apathetic towards disaster preparedness:

“As a student coming from a country that was never exposed to disaster before, I chose Nagoya because it was listed among the places that were not hit by disaster recently. Other students also have the same opinion with me that Nagoya is a good place to stay; they tend to think that Nagoya will never be attacked by earthquake or tsunami like Tohoku.”

“...Since I came to Japan, I know that there are always possible dangers of natural disasters, especially tsunami and earthquakes. However, I am living in Nagoya where I can hardly experience those disasters and I never had education about preparing for natural disaster, I cannot feel the power and seriousness of natural disasters.”

With the strong government policies (e.g. the “300,000 International Students Plan”⁸) aimed at internationalization of higher education in Japan, and the introduction of English taught courses at several Universities, the number of students with minimal Japanese language ability is expected to increase dramatically over the coming years. A big step towards building the overall resilience of the university community is to recognizing the existing need for and taking action towards reducing vulnerability and exposure as well as building the capacity of international students’ to deal with possible disasters. Through DRRE, universities will not only become more resilient, but will also be fulfilling one of their most important contribution to society, that of transforming individuals into valuable members of society who can be of service to themselves and others (even in times of disaster).

Overview of DRR Activities at Nagoya University

Nagoya University over the past few years has been

steadily increasing its DRR efforts through a wide range of activities including earthquake proof retrofitting of school buildings, establishment of a dedicated Disaster Management Office, a well-structured incident command system, introduction of a cloud based safety confirmation system, campus-wide disaster evacuation drills (twice a year), and production of DRR related information material in a variety of media. For international students, English language DRR material, English language announcements during the drills, disaster preparedness seminars, workshops and exercises (e.g. firefighting drills and life-saving skills training), sponsorship of visits to DRR themed facilities such as the Disaster Reduction and Human Renovation Institution (DRI) in Kobe, and most recently (from 2014), the launching of an English taught DRRE undergraduate course in the University’s General Education program. And with the recent opening of a state of the art Disaster Mitigation Research Center (DMRC), Nagoya University is expected to play a leading role in DRR research and DRRE both in the Chubu area and in Japan as a whole.

3. The new DRRE Course at Nagoya University

Course Overview

This new DRRE course ‘Preparedness for Imminent Natural Disasters’ was started in the Fall Semester of 2014 as a general education subject open to all students in the 2nd to 4th year of Nagoya University’s English taught Global 30 International Program (G30 Program). The course objective is to give students a firm understanding of DRR efforts in Japan and to nurture a culture of personal preparedness among the international students. In this first attempt, the course was conducted collaboratively between Nagoya University and Tohoku University, with omnibus-style lectures by various specialists from the two universities. The course was mainly delivered as a regular course in 15 blocks of 90 minutes each. Most of the lectures were conducted jointly with the two class venues connected using a proprietary vid-

⁸ Launched in 2008 by MEXT as part of a “global strategy” to attract 300,000 international students per yearly before the year 2020 (MEXT 2008).

| | Nagoya University | Tohoku University |
|-----------------------------|---|---|
| | 1-1) Orientation, Self Introductions and Student grouping (NU & TU) | |
| | 1-2) Course Introduction (NU only program) | 1-2) Course introduction (TU only program) |
| Week 1 | 1-3) Visits to DRR themed facility: Disaster Reduction and Human Renovation Institution (DRI) in Kobe (NU only program) | |
| Week 2 | Personal disaster preparedness workshop focusing on developing a 100 yen shop disaster kit (NU only program) | Tohoku University Student reaction to the 3.11 Earthquake (TU only Program) |
| Week 3 | Presentations by student groups of each University (NU & TU) | |
| Week 4 | International Students and Disaster safety Lessons learnt from Fukushima University (FU) | |
| Week 5 | Great East Japan Earthquake: Lessons Learned and where we are heading (TU) | |
| Week 6 | Risk management and networking (Sendai International Relations Association/SIRA) | |
| Week 7 | Disaster Management in Japan (NU) | |
| Week 8 | Earthquake Prevention Technology and Interdisciplinary Research (TU) | |
| Week 9 | Lesson Learned from the 0311 earthquake and Tsunami Disaster (TU) | |
| Week 10 | Joint session between NU and TU students followed by Group Work in preparation for Tohoku field trip | |
| Week 11 | Nankai Trough earthquakes, their potential hazards to the populated area of Japan (NU) | |
| Week 12 (Worth 3 blocks) | Tohoku Field Trip (2 days) (Fukushima: Koriyama City, Miyagi: Onagawa Town) | |

Key Joint session using web video conference system Separate session conducted at each university
NU: Nagoya University **TU:** Tohoku University **FU:** Fukushima University

Figure 1: The Collaborative DRRE Course by Nagoya University and Tohoku University

eo-conferencing system. Field trips and team projects were also included in the course work (Figure 1).

The number of Nagoya University international students accepted for the course was limited to 10 due to budgetary requirements related to the planned field trips. The students came from several different countries, and from different fields of study. The number of students participating in Tohoku University was 7, among which 3 were Japanese and 4 were international students of the International Program in Liberal Arts/ IPLA. Both

universities assessed their students independently. The student assessment for Nagoya University was based on attendance (30%), submitted projects and reports (50%), and active participation (20%) in all aspects of the course.

The lectures were given by Professors affiliated to the DMRC and Disaster Management Office (DMRC+DMO) at Nagoya University, and the International Research Institute of Disaster Science (IRIDeS) at Tohoku University⁹. To provide an extra perspective, outside lectur-

⁹ DMRC+DMO and IRIDeS are world leading disaster related research and education institutions with the large number of affiliated experts having deep knowledge and experience in DRR related fields.

ers were also invited, one from the local governments in Sendai and the other from Fukushima University. As a class project, Nagoya University students were tasked with the preparation of a cheap personal disaster kit with a small budget of 3,000 yen per team for purchase of items in a 100 yen shop (items to be purchased excluded water and food items, and the bag itself). The budget figure was a rough estimate of how much money an international student might be willing to spend to prepare a functional basic disaster kit. The final contents of the disaster kits were put on display at the yearly disaster preparedness seminar for international students at Nagoya University.

For the field trip, the students were required to join a visit to DRI in Kobe¹⁰, and the other to disaster affected areas in Tohoku region¹¹. After the field trips students made presentations and submitted reports. During the Tohoku field trip, Nagoya University and Tohoku University students in teams of about 5 each interviewed the nuclear power plant disaster evacuees living in a temporary housing complex in Koriyama City (Fukushima Prefecture), and tsunami disaster survivors living in Onagawa Town (Miyagi Prefecture). After the interviews, each team made presentations of their findings in front of the other students and 4 faculty members responsible for the course. After the presentations, Nagoya University students were asked to include in their reports personal suggestions towards the improvement of this DRRE course. Specifically, they were asked to come up with what they thought would be the ideal contents for a DRRE course targeting International Students in Japan. Many students came up with very useful and creative suggestions, most based on their own experience living in Japan as well as the information gained in this course. Some of these suggestions have been incorporated into the discussion section below.

Collaboration between Nagoya University and Tohoku University

The collaboration between Nagoya University and Tohoku University for this DRRE course fits well with the general DRR objective of learning from experience (the Tohoku experience) and using that knowledge to prepare well for future hazards (i.e. the imminent Tokai Earthquake). The Tohoku Area, where Tohoku University is located, suffered a tragic triple disaster (earthquake, tsunami and nuclear reactor meltdown) on March 11, 2011. On January 2011, just 2 months before the earthquake, experts had placed the probability of the Tohoku Earthquake at 99% occurrence within 30 years. The same experts had placed the probability of a Tokai Earthquake of magnitude 8.0 ~ 9.0 occurring within 30 years at 87%¹². With an imminent and potentially catastrophic disaster (Tokai or Tonankai Earthquake), it is important for the Tokai Area to refer to the many important lessons from the Tohoku disaster, and for Nagoya University community to learn from the experience of the Tohoku University community. It is for this reason that the content of the course was focused on earthquake disasters, and had been given the name “Preparedness for imminent natural disasters”.

4. Challenges and Opportunities

On introducing a new Syllabus into the curriculum

Many universities already have fully loaded curriculums and introducing a new course is understandably a big challenge. The DRRE course at Nagoya University was made possible through strong support from the university leadership and administration of the G30 Program who had seen the growing importance of starting a DRR course. Currently, many universities are at a point of rigorous internationalization, with the introduction of new English-based courses being encouraged. Therefore,

¹⁰ Kobe was devastated by the Great Hanshin Earthquake on Tuesday January 17th 1995 with a loss of over 6,434 lives [兵庫県 2008].

¹¹ Tohoku region suffered a catastrophic triple disaster on March 11th 2011 caused by a magnitude 9.0 earthquake (The Great East Japan Earthquake) which resulted in a massive Tsunami and meltdowns at a Nuclear Power Plant in Fukushima. Casualties include 15,891 deaths and 2,584 missing persons [警察庁 日付不明].

¹² As shown in report by the MEXT- Earthquake Research Committee (文部科学省・地震調査委員会) on January 2011 [地震調査委員会 2011].

despite the possible hurdles expected when establishing a new Syllabus, the prevailing internationalization mood at many universities offers an opportunity for educators to introduce English taught DRRE as a regular course for their international students. Depending on available human resources, some universities might find it easier to work collaboratively with others in order to reduce burden on its faculty and also expand the number and variety of accessible DRR experts. The collaborative model experimentally implemented by Nagoya University and Tohoku University as described in this paper is not meant to be exemplary, and is admittedly more challenging to establish as it is. This experimental implementation however served to show the viability of this method as one way of implementing DRRE collaboratively, and to pave way for further exploration of collaborative DRRE delivery methods.

On Course Delivery and Multidisciplinary Content

Combining several methods of delivery (face to face, video conferencing, site visits, projects and reports) exposed students to DRRE from different perspectives which clearly contributed to a richer learning experience. However, there are still several challenges related to course delivery that need to be addressed. DRRE content is drawn from multiple disciplines, and adding to this complexity is that university students, unlike those in primary and secondary level, have specialized fields of study and research. Designing and delivering a DRRE course that can adequately gather for students, each with clearly defined different areas of interest poses a big challenge which needs a lot of effort to achieve. Here again, some of the feedback we got from students offer a useful starting point towards designing or improving the DRRE course delivery.

First is on the important role of including field studies in the course. According to the students, the visits to DRI in Kobe and to the disaster affected area in Tohoku were the highlights of their learning experience. To most, it was the first time they had ever witnessed the impacts of large scale disasters. The site visits also provided students with a rare opportunity to interact with disas-

ter victims who are at different phases of the recovery process. The Kobe visit provided an interaction with those who have successfully gone through the recovery process while the Tohoku visit was with those still in the middle of a very difficult recovery process. This gave the students a chance to see firsthand the impacts of the disaster, to rethink about the importance of being prepared, and also a clear understanding of the situation on the ground after disasters.

“... listening to the stories of victims... While watching their red eyes that was about to wash away with cry [tears] that comes from sorrowful heart, I felt deep inside how it hurts to feel abandoned and alien[ated] along with the thought of never being able to come[go] back [to] your home. Beyond all these sentimental impressions what lies [remained] is the fact that the suffering was the result of human action, and here what matters is human action too; how we can mitigate this kind of disasters by being prepared and anticipated. Thus it is evidently imperative that we must stay prepared, alerted and spread the message of all these facts so that others will stay prepared too. The class and the trip was an overwhelmingly eye opening for me and rendered me responsible to narrate those stories so that others stay alerted for their disaster preparedness.”

“..The visit to Fukushima victims who live in the temporary houses made the strongest impact on me. It was not only the melancholic tragedy they faced that made an impression on me, but their positive attitudes towards life even after facing such tragic struck a chord with me. I asked myself, if I could live my life like them after facing a disaster? If I ever were to face with such unfortunate situations, I really hope that I would be able to stay positive and strong and move on with my life after.”

Many of the student feedback also mentioned that the site visits and interaction with the disasters survivors brought a greater understanding of the DRRE class objectives and instilled a deeper sense of personal re-

sponsibility and urgency for their own preparedness. Combining these two past disaster areas (Kobe and Tohoku) brought more clarity to the concept behind the 3 disaster management stages they had learnt in class (Mitigation/Preparedness before, Response during and Recovery after Disasters) and an understanding of the complexities of dealing with disasters.

“...People outside of Japan might see that the problem of East Japan Great Earthquake and Tsunami is a one big homogenous problem. However, in the reality the problem is so complex and different between one region and another. People who were affected by tsunami have different issues with people who were affected by nuclear radiation. The problems are so complex that even government of Japan cannot figure out the right way to solve all of these problems.”

“...As I have not encountered such terrifying event of the nuclear meltdown nor such powerful earthquake or tsunami, being able to listen to this [talk] from someone who has experienced it really did hit my heart. I believe that this trip and interview has been a valuable opportunity that I would not be able to have if I have not taken this course....”

From this, it is clear that site visits are one way that could be effectively utilized in increasing student involvement and understanding of course content. Even where field trips might not be possible, including some lectures or stories delivered by those with firsthand experience of disasters could serve a similar purpose.

Secondly, there is a need to ensure that course content is presented in a less technical manner in order to promote understanding and keep the interest of the students. It is important to remember that the students have different levels of prior exposure to DRRE. Some of the student comments related to this specifically mentioned the use of unfamiliar terms and complicated scientific data as a contributing to poor comprehension and lowered interest in some parts of the lectures:

“...many students in class were not familiar with the terms and contents of the lecture, which gave us a hard time understanding some parts”

“...some lectures were given in an advanced and sophisticated way leading to lack of student participation.”

Thirdly, while it is important to give the lecturers freedom over content of their lecture, there is need for elimination of overlap in content. In our case, lecturers were chosen based on their different area of expertise in DRR, and were asked to give the coordinators only the title of the lecture beforehand, just ensuring that there is no overlap in the themes. Despite this, the issue of overlap in some content still came up. It would have been more effective if the course coordination had been done in more detail (e.g. asking the lecturers to send their PowerPoint draft beforehand), but this would have been a time consuming and difficult process for the course coordinators as well as the lecturers. Therefore, one way this could be avoided in the future would be by selecting lecturers based on more broadly defined professional disciplines (e.g. Engineering, Law, Journalism, Medicine, Public Administration, Business, Architecture, etc.). Another useful technique proposed by one of the students was the use of videos pre-recorded by the lecturers, after which a question and answer session with the lecturers is offered through a video conference system. With this approach, overlapping content in the videos can easily be edited out. Furthermore, these videos could also be compiled and shared with other universities online. This could potentially contribute to propagation of DRRE to other universities.

Finally, engaging students through practical projects and tasks with tangible outputs (e.g. the disaster kit preparation project) can help focus the class towards the accomplishment of this goal, and in general towards the course content. Such tangible projects can also be used by the course students to reach the greater international student body with the DRR message. For example in the Nagoya University case, the content of

the prepared disaster kit were displayed in a disaster preparedness seminar attended by a large number of international students. Some of the students were pleasantly surprised that a functional disaster kit could be prepared from items bought at a 100 yen shop with a budget of less than 3000 yen.

On utilization of Videoconferencing System

Video conferencing technology enables groups in different venues to interact in real-time through audio and video over computer networks. Its merits in education as well as in other settings such as virtual business meetings, have been well documented, chief of which are time and cost savings. In our case, the other big benefit gained using the video conferencing system was the access to a large pool of experts in the two collaborating universities who might otherwise have been unavailable if they had to travel to give the lectures.

In this course, the video conference system was setup as a single point system to support the collaborative class sessions. When using video conference systems, interaction is limited to audio and video. The quality of the Audio and video is therefore of great importance as it directly impacts the quality of content delivery. Poor quality severely limits effective lecturer-student interaction. And for many lecturers who are used to the face-to-face teaching method, it can be awkward and distracting, and building rapport especially with the students located in the remote venue can be a challenge. Therefore, despite all its merits, use of video-conferencing in teaching requires special care. It became clear that there is need to design the presentation flow providing more time for students to understand content and to actively participate. One of the students suggested that:

“...since the internet connection was unstable at times, perhaps students could watch a pre-recorded video of the lecture for 45 minutes, then conduct a live discussion through conference call for the next 45 minutes. This will allow a smooth transition from the lecturing sessions to Q&A, and less worries on the connection stability.”

Current advances in ICT also opens up opportunities for other more creative course delivery methods that could be used instead of, or in combination with video conferencing and pre-recorded video lectures. Online and hybrid instruction methods have been growing in popularity and might be the ideal form of DRRE deliver especially when done on a collaborative manner. There is need to investigate how these methods can be leveraged in DRRE for international students in Japan, but this is beyond the scope of this paper.

On Inter-University Collaboration

Delivering a course through inter-university collaboration requires extra effort to setup and coordinate. One of the big challenges was in scheduling. Concurrently conducting the two classes in the different locations requires careful balancing of the tradeoffs between the need to align the courses in the two universities and the considerations for optimized schedules in each university. For example, in our case, even after alignment of the course to the same dates and class periods, a 10 minute difference in the start and end times in the timetables of the two universities was still an issue that required additional time management effort in order to keep the resultant time loss to minimum. Despite these and other challenges, inter-university collaboration in education has a number of benefits including but not limited to the opportunity for peer interaction and empowerment of faculty and students through sharing of diverse experiences and knowledge, the sharing of the limited human resources as well as encouraging replication of good practice. These benefits merit further exploration into more efficient ways of supporting inter-university collaboration in DRRE delivery for international students.

On the need to engage the wider student body

In general, the students had positive comments for this new DRRE course, with some students describing it as:

“..One of the most interesting courses that I have taken throughout my undergraduate years...”

“The preparedness for Imminent Natural Disasters

course was one of the best classes I have taken at Nagoya University and I enjoyed a lot learning how to be prepared for imminent natural disasters.”

Students also expressed their hope that the DRRE course is provided in a way that is accessible to more students. Some suggested that each year the course students of the year could form a core group that engages the larger student body using DRR related practical class projects (like the disaster kit project), or participate as core organizers of the several disaster preparedness activities targeting international students at Nagoya University. It should not be forgotten that the overarching goal of DRRE is to raise the resiliency of the whole international student community. Since credit earning courses like this one at Nagoya University targets a small section of students, it is imperative that we devise new ways of using such classes to reach and involve the large number of international students who might benefit from the DRRE. This is also an area that needs to be investigated further in the future.

5. Conclusion

Clearly, the importance of DRRE to society can never be overstated. This paper has reported on a newly established DRRE course at Nagoya University looking at some of the challenges, and discussing some probable opportunities that could be leveraged in promoting DRRE for international students in Japanese institutions of higher learning. Some points that have been discussed for stimulating adoption and delivery of DRRE to international students include:

- (1) Inter-university collaboration as a viable method for course delivery opening new opportunities for sharing of both human and material resources and reduction of effort duplication. This is especially important for DRRE which draws content from multiple disciplines.
- (2) Field studies as essential for creating student connection with DRR, fostering greater involvement, and generally improving the course content and overall learning experience.
- (3) Including practical projects and tasks with tangible outputs (e.g. disaster kit preparation) which serve to motivate and focus student engagement in the course.
- (4) Embracing Information Technology. The Video Conference System served a central role in delivery of this collaborative course. However it is suggested that moving towards other online or hybrid course delivery methods should be pursued further in order to enhance the learning experience.

As the number of international students in Japan is projected to increase, the need for DRRE targeting international students will continue gaining prominence. Going forward, we see an urgent need for promotion of appropriate models and platforms for collaboration or for replication of good practices in DRRE efforts as the next important step towards the scaling up of DRRE for international students.

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