

Learning by doing

Use of laboratories in teaching disaster relief

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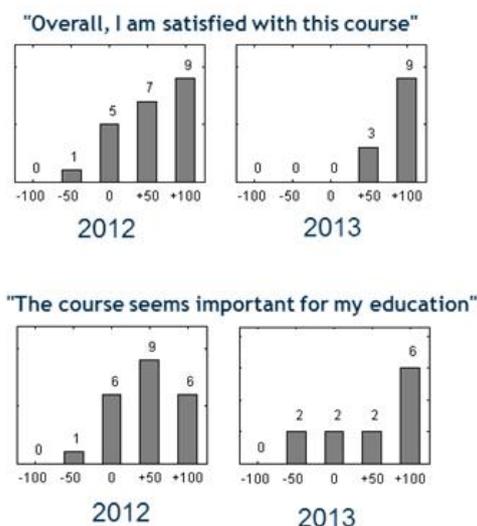
For the past two years, the Department of Industrial Management and Logistics at LTH, in collaboration with Avenir Analytics, have taught a Master of Science course in disaster relief logistics to students in management, entrepreneurship, and engineering at LTH. The aim is to provide academic models and applied knowledge on design, management, and measurement of humanitarian logistics focusing on disaster preparedness and response to natural and manmade disasters. Disaster relief logistics may be described as assistance and action designed to save lives, alleviate suffering, and maintain and protect human dignity during and in the aftermath of emergencies. It is intended to be governed by the principles of neutrality, impartiality, and independence and be short term in nature providing for activities in the immediate aftermath of emergencies. It generally consists of material assistance; shelter, water, medicines, cash, etcetera; food assistance; general feeding, supplementary feeding, and cash transfer; and relief coordination, protection and support' (adapted from GHA (2013) at <http://www.globalhumanitarianassistance.org>).

Research and teaching in disaster relief logistics is a new and fast developing area, but there is a lack of cooperation between researchers and practice: '... there doesn't seem to be a strong dialogue between the sector and academia about things that could make a real difference' [1]. There is little material available that demonstrate practical applications of theory. The literature is characterised by theoretical modelling, pure narratives, and reviews [2]. The gap is a common challenge in (logistics) management [3], also in teaching of the subject. Many traditional engineering courses make use of laboratories, while logistics education tries to solve it by taking students for factory and

company visits. In disaster relief, some humanitarian organisations prepare selected staff members for deployment by organising trainings creating a 'real' context through exercises run to simulate real situations. Considering different learning styles [4] and the value of learning by doing, an ideal solution would be to deploy the students to an operation so they can experience the aftermaths of a real disaster. This is obviously not realistic and some kind of laboratory is necessary. The ideal laboratory would be for students to participate in the trainings organised by humanitarian organisations. Unfortunately, cost and resource restrictions do not allow for this. Hence, to get as close as possible to 'reality' in this course, a range of teaching tools and methodologies were developed. The course is designed and facilitated by academics and practitioners and makes intensive use of group exercises, video, current developments and cases, discussions and desk-top simulations, supported by guest lecturers presenting field cases to teach students how theory is applied in practice. Two examples of teaching modules are described below.

The first is based on a research article [5] provided as pre-reading. A meeting simulation group exercise is conducted, in which individual students are asked to take on the role of different humanitarian organisations with an own mandate and logistics requirements. Role descriptions and tasks are provided. In the meeting, students have to reach consensus on which items to dispatch to the disaster area within the constraints of limited transportation capacity. Students learn that coordination is difficult in practice due to different organisational interests and the overall goal in terms of priorities and capacity utilisation. The exercise demonstrates the importance of understanding the needs of the affected population, and what each organisation can bring to the table. The students feel they are practicing real life situations in a safe environment and experience how logistics relate to a larger humanitarian context.

The second is a three-step exercise to demonstrate that it is possible to forecast demand in disaster relief [6] and how it can be used for preparedness and response. It was developed based on research undertaken in the project "Contribute" [7]. As in any real situation, there is lack of data, which means assumptions must be made. Students can make use of all the material they have studied throughout the course and they have also learnt to use a range of websites, databases, and tools publicly available. The students must present, and be prepared to defend, their work and conclusions in discussions with fellow students and facilitators. They also get a first insight into the complexity of disaster relief logistics and they learn to practice preparedness and response planning theory. As for course development, students have effectively been part of the course refinement as they pro-



Course evaluation results of 2012 and 2013.

vide detailed and instant feedback on every module in the course with the use of an online survey tool called Survey-monkey (<http://surveymonkey.net>). They assess their own activity and learning points based on the reading material, lectures, and discussions after each module. This allows the course facilitators to compare intended learning objectives with actual results and adjust the material where necessary.

For the department and the teaching team, the course is resource intensive in terms of working hours, travelling, and housing, in addition to the substantial development undertaken in the interactive exercises and role-plays made specifically for the course [8]. However, looking at the student evaluations this course gets ratings way above the average. Students are enthusiastic and motivated throughout the course, some have afterwards been awarded internships in organisations and others have been allowed to do their master projects within the field. This is important for the department and rewarding for the teaching team, but most importantly, the aim is to have longer-term impact in terms of preparing a new pool of humanitarian logisticians to improve performance of disaster relief logistics and thus provide better support to those in need.

References

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[7] Contribute is a research initiative on disaster relief logistics with the vision to engage representatives of the key actors involved in operating humanitarian supply chains, and use the collective knowledge to develop evidence for (1) putting a spotlight on the topic and engage the wider humanitarian community in actively discussing and generating solutions and (2) developing tools and concepts that could be used by the actors to implement on the solutions. The project has run from 2010 and is co-funded by SMARTRANS in the Norwegian Research Council. The main research group was made up of representatives and staff from Avenir Analytics, BI Norwegian Business School (BI), and Wilh. Wilhemsens-group. These were supported by representatives from the International Federation of Red Cross and Red Crescent Societies (IFRC) and the Massachusetts Institute of Technology (MIT).

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The real – Red Cross Red Crescent response after Haiti Earthquake 2010



The ideal laboratory – ERU- Training Norwegian Red Cross October 2008



The real laboratory Disaster Planning exercise LTH April 2012

Use of laboratories: how to create disaster relief reality in the classroom.