Exchange of higher education teaching and learning practices between United Kingdom and Thailand: a case study of RailExchange courses

Anna Fraszczyk, Mahidol University

Waressara Weerawat, Mahidol University

Marin Marinov, Newcastle University

Abstract

The RailExchange project has been developed in collaboration between two universities, one UK-based and one Thailand-based, to work on educational ideas for rail to benefit the rail industry in Thailand. At the same time a new rail Master programme has been designed with a strong input from the rail industry in terms of technical and interpersonal skills necessary for a formation of a successful rail graduate. The new programme has been established at the Thai university and aligned with Thai and international higher education frameworks (AUN-QA and TQF). As part of the activities listed in the exchange project, the lecturers from the UK have been invited to conduct short experimental classes to teach on three different subjects, which are part of the new rail Master's curriculum. The UK visiting lecturers helped in broadening the perspective of the Thai academics in terms of educational content and active learning style, such as a hands-on approach and applied learning style with real life scenarios and student-led learning. The English language was used to deliver the experimental classes to Thai participants, who represented academia and industry. Feedback received highlighted differences between the UK and Thai approaches to higher education learning, but also suggested improvements, which should be taken into account in the delivery of the Master programme in rail in the near future.

Key words: education, teaching, rail, feedback, exchange

1. Introduction

University teaching and learning practices keep evolving with development of new technologies and tools, which facilitate effective education delivery. eLearning, virtual reality and other digital tools have been entering the academic education sphere since their early days of developments (e.g. Blackboard tool, online tutorials, MOOCs) and are becoming yet another way of educating students. A blended approach to teaching and learning, where traditional classroom-based education is combined with a modern (often digital and outdoor) education, serves the purpose of targeting all types of learners, from introverts to extraverts and from traditional to digital learners, and giving them most suitable tools to facilitate their individual learning processes.

However, a traditional approach with classroom-based courses still remains the basis of academic education across the world. Globalisation and easy physical and digital connections between countries allow universities to learn from each other, collaborate in a friendly way and share their best practices for the common good of educating the next generation of successful graduates. Examples of such

international collaborations in rail education include, for example: a rail Master curriculum development research project (Marinov et al, 2013; Marinov and Fraszczyk, 2014), an intensive programme in rail and logistics (Fraszczyk et al, 2015a; Fraszczyk at al, 2015b; Fraszczyk et al, 2016) or RailUniNet – a global network of universities specialising in rail education (Railway Talents, 2017).

This paper explores a feedback given by participants of three short courses organised by a partnership of a UK-based university (Newcastle University) and a Thailand-based university (Mahidol University) on a 'British-style' teaching and learning methods used to deliver the courses.

The paper is organised as follows. Section 2 focuses on academic standards in the ASEAN region/Thailand and the way students learn railways in the United Kingdom (UK) and beyond. Next, Section 3 introduces RailExchange project and its tasks related to the exchange of good practices and curriculum development. Section 4 explains methodology applied to collect feedback data, where analyses of results are presented in Section 5. Conclusions on the paper are included in Section 6 and recommendations for the future are listed in Section 7.

2. Higher education teaching standards in the UK and Thailand/ASEAN

2.1 Thailand/ASEAN perspective

The Thai Qualifications Framework for Higher Education (TQF) has been discussed for over 15 years and has been implemented in Thailand for about 10 years now (MUA, 2017). This compulsory framework is set as a tool for quality assurance in the Thai higher education system, in addition helping with mobility of students between different educational institutions. The framework focuses on outcome-based results of graduates in five domains: 1 - ethical and moral development; 2 - knowledge and skills; 3 - cognitive skills; 4 - interpersonal skills; and 5 - responsibility, analytical and communication skills. Each academic programme needs to explicitly address these outcomes with their curriculum mapping. This process needs to be regularly evaluated and monitored by the programme committee for a continuous feedback loop.

With the vision of the collaborations among the Association of Southeast Asian Nations' (ASEAN) countries in 1996 the ASEAN University Network (AUN) established a higher education framework known as the AUN-QA (AUNQA, 2015). Awareness of the fact that quality in higher education is not the only dimension of academic quality, a multi-dimensional approach has been used in establishing the framework. The AUN-QA model for the programme level starts with stakeholders needs in mind and relates these to the expected learning outcomes. To ensure the achievement of the graduates with the learning outcomes the 11 quality measures have been established in the framework ranging from the programme structure, teaching approaches, assessment, supporting staff and the facilities. The TQF and AUN-QA both focus on the outcome-based learning intention. While the TQF can be written in both Thai and English versions the AUN-QA needs to be written in English since an international assessment team from the ASEAN countries evaluates it.

Besides the top down policy in education policy, there are some initiatives among the engineering schools in Thailand in enhancing their curricula. In general, when involved in an engineering discipline, there are certain sets of skills and knowledge expected from the graduates. In order to proceed with the international curriculum in an engineering discipline, the ABET's accreditation of the US system often has been mentioned at the international level. ABET (2017) has established the concept of

enabling an innovative engineering programme rather than conforming to the standard. There is also an on-going international collaborative network of CDIO (2017) which focuses on setting up the framework on the engineering curricula planning and outcome-based assessment. The framework emphasizes the capability of the new engineering graduate in Conceiving-Designing-Implementing-Operating of the real world systems and products. The new Master programme in rail engineering at MU is being designed in compliance with the AUN-QA guidance.

2.2 How Students learn railways in the UK and beyond

It is now known that learning happens when, as a result of brain processes, knowledge transforms from short to long-term memory (Bos, 2002). The lecturer's goal is to act as a connector who makes sure that students have stored some vital knowledge for later recall after their lectures and classes (Effie and Soden, 2003) are completed. Rail is one of the fastest growing industries in the world, engaging with modernisation and implementation of new technologies. It is of prime importance for students to understand, as in other sectors, that new developments, techniques, skills and information could be linked to prior knowledge at any time in the future. Therefore, when in the university students ought to be prepared for the process of lifelong learning (Weedon and Riddell, 2009).

Students are strategic learners; they choose what to learn and in what depth. Deep vs. surface learning – either way developing a deep understanding is crucial for securing a learning outcome of good quality (Haggis, 2003). It is quite common for 'the assessment to drive the learning' and students/learners are often concern about what will be on the exam. However, the understanding should drive the learning; not the assessment!

Knowledge moves from short to long-term memory when students are involved in the process of creating their own knowledge (Price and Maier, 2007). That is why students should be encouraged to think constructively so that they can create their own knowledge. Students learn as they are asked to analyse a critical situation, predict a failure and find a solution to real world problem. When students have learned something from a lecture, it can certainly be seen reflected in their behaviour, vocabulary and confidence. Hence to assess the effectiveness of learning, lecturers and educators have to judge the nature of implications and impacts of their learning methods on students. This is an outcome-based education.

Currently, rail learning methods are strongly subject- specific (Marinov et al, 2011), mainly professor-led/senior trainer-led offering a few opportunities for students to take part in devising a new rail research project and/or a new rail-related programme/course and curriculum (Marinov and Fraszczyk, 2014). This situation has shown a negative impact on the creativity of rail students as it is rather limited in nature and does not give too many options and potential avenues of research activities and knowledge to flow. Therefore there is a need for a more integrated competence-based, student-led method to make sure that many options and avenues of knowledge are offered for building the skills needed for a sustainable rail transport. Research-based education is more effective in developing a deep understanding of multi-disciplinary concepts, innovative solutions, new policies and practices at all three management levels: strategic, tactical and operational.

Railway is Applied Science. What is observed at the moment as practice in Newcastle University and other universities is that rail-focused teaching activities are primarily classroom-based, involving PowerPoint presentations, discussions and seminars. For students to learn, appropriate resources are

required. Specifically there is a need for rail operations laboratories equipped with modern technology and software. If such resources are missing it would be quite challenging to ensure a learning outcome of good quality.

Modules incorporating a multi-method research-based approach, where lectures are delivered in the beginning of each module, followed by a rather short research-based project have shown a positive learning outcome. Majority of students respond well to this approach and gain more confidence as they are given the opportunity to immediately apply the taught material from the lectures into their research-based projects.

For rail-related subjects, a contact with the real world is very important for achieving a learning outcome of good quality. It is crucial that technical visits to infrastructure managers (i.e. Network Rail) and train operating companies are organised. It is also crucial to ensure access to real world data and case studies when rail orientated subjects are taught.

3. RailExchange context

3.1 Industry-academia partnership

RailExchange is a 20-month industry-academia partnership project funded by the UK's Newton Fund scheme. Partners in the consortium include: one British university – Newcastle University (NU), one Thai university – Mahidol University (MU), and one industry partner – BTS (first metro operator in Bangkok).

Two main tasks of the project, related to teaching and learning rail, included:

- Organisation of special lecture series with guest speakers from NU to enhance Thai engineering educators knowledge;
- Staff exchange (academics and researchers) between MU and NU for joint research and curriculum development.

3.2 Curricula development

In the academic year of 2016/17 MU was in the process of designing a curriculum for a new Master programme in Rail Engineering. Six core courses and 17 elective courses were originally drafted by the team at MU. Next, the team from NU was invited to comment on the content of four courses on:

- EGRS 502 Research Methodology for Railway Engineering (core);
- EGRS 512 Railway Planning and Timetabling (elective);
- EGRS 511 Applied Statistics and Simulation for Railway System Planning Performance (elective);
- EGRS 516 Freight Rail Transport and Logistics (elective).

As a follow up of the curriculum design activity, three short courses, based on the curricula materials reviewed, were organised at MU in 2017. The aim of the courses was to test the curricula as well as collect feedback from participants on various teaching and learning methods employed. The courses were internally advertised to Thai academics and industry contacts and approx. 20 people per day attended each course. Table 1 shows basic characteristics of the three courses delivered.

Table 1 Details of the three courses delivered at MU

Master course title	Railway Planning and Timetabling	Applied Statistics and Simulation for Railway System Planning Performance	Freight Rail Transport and Logistics
Short course title	Rail Timetabling	Applied Statistics for Rail System Performance	Rail Freight Transport and Logistics
Date of the course	February 2017	March 2017	May 2017
Characteristics of a lecturer	Lecturer 1, male, specialisation in education and research in rail operations, Newcastle University	Lecturer 2, female, specialisation in education, research and outreach in rail and travel behaviour, Mahidol University (ex-Newcastle University academic)	Lecturer 1 (as in Rail Timetabling course)
Course duration	3 days	2 days	5 days
Number of feedback forms collected	17	12	10

4. Methodology

An anonymous feedback form is an effective and a common practice of collecting participants' views on a course delivered (e.g. at NU at the end of each course an online course feedback is collected). In a rail context, a feedback form was employed to evaluate for example the intensive programme in rail and logistics (mentioned in Section 1), what resulted in a number of analyses focusing on different aspects of students' experience (Fraszczyk et al, 2015a; Fraszczyk et al, 2015b; Fraszczyk et al, 2016).

Following this methodology a feedback form was designed to investigate participants' views on the short rail courses delivered at MU in 2017. The form included 11 questions grouped around three themes:

- Learning activities during the course (lectures, exercises, discussions, etc.);
- Personal and academic experience (improvements in English language skills, communication skills, networking opportunities, etc.);
- Suggested improvements (more lectures, individual research projects, technical visits, etc.).

At the end of each course a paper feedback form was distributed among the participants who voluntarily and anonymously completed the form.

5. Analysis

Due to a different content and duration of each of the three courses variety of teaching methods and tools was tested. This means that some of the activities conducted were comparable between the

courses (e.g. lectures, group exercises), but some were unique to one course only (e.g. SPSS lab, paper review activity). However, where possible such comparisons were made and are presented in the following sections.

5.1 Learning activities

Each of the three courses included lectures and group exercises and Figure 1 displays mean scores for Day 1 activities. Using a Likert scale, where 1 – 'very negative', 2 – 'negative', 3 – 'neutral', 4 – 'positive', and 5 – 'very positive', the respondents gave the highest mean score to Rail Freight course (4.5). The other two courses received mean scores close to positive (from 3.8 to 4.1) with Rail Timetabling getting a slightly better result for lectures and Rail Statistics getting a slightly better feedback on discussions.
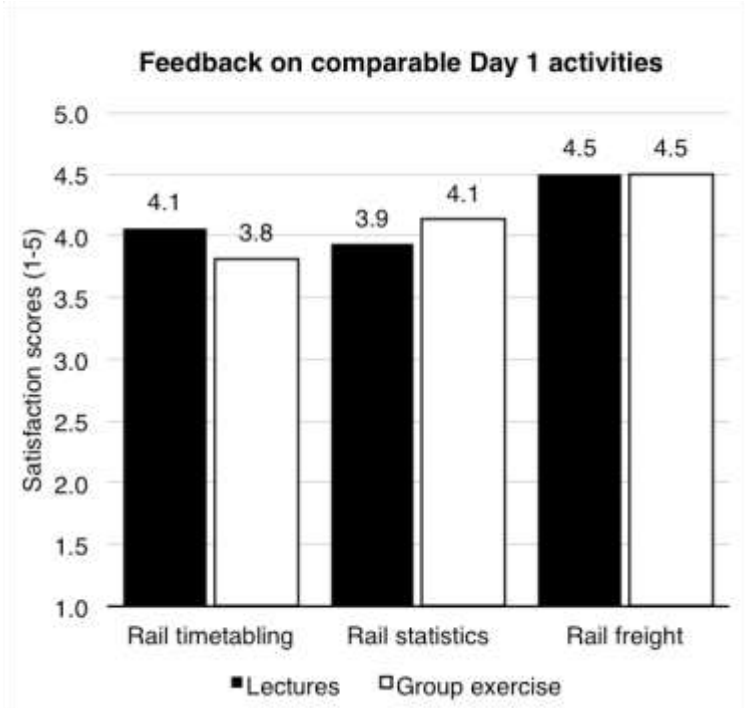

Figure 1 Mean scores for Day 1 activities between the three courses

Feedback on Day 2 activities displayed on Figure 2 was more diverse with the highest scores (4.2 – 4.5) given to activities at Rail Statistics course (e.g. afternoon's 'Digital Railways' discussion). This was followed by a still positive mean score for Rail Timetabling's morning activity (4.1), with a lower score for the afternoon's group exercise (3.6). Mean scores of 3.4 for Rail Freight course, which are 1.1 score less than in Day 1, show that respondents' opinions changed sharply.

Feedback on comparable Day 2 activities

Satisfaction scores (1-5)

Rail timetabling — Morning exercise 4.1, Afternoon exercise 3.6
Rail statistics — Morning exercise 4.2, Afternoon exercise 4.5
Rail freight — Morning exercise 3.4, Afternoon exercise 3.4
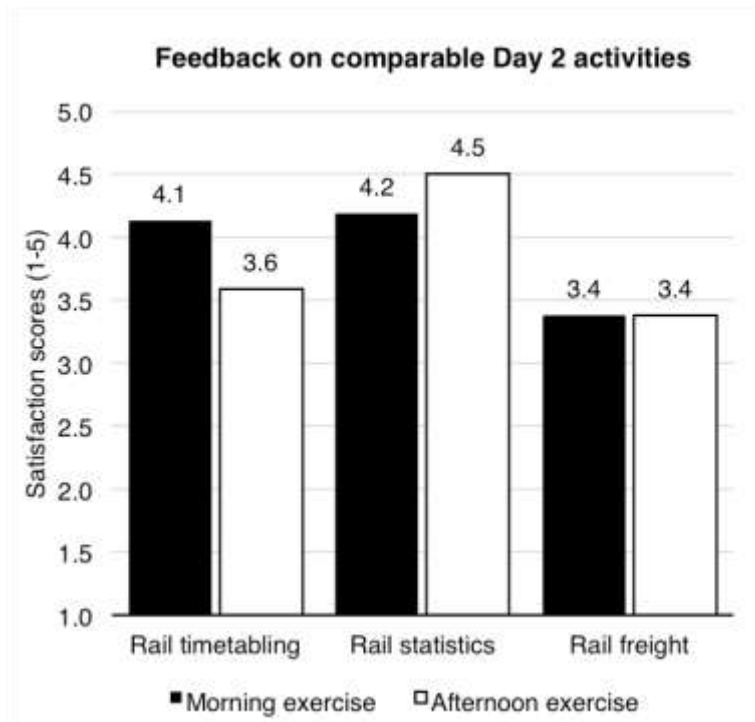
■ Morning exercise   □ Afternoon exercise

Figure 2 Mean scores for Day 2 activities between the three courses

In addition, variety of non-comparable activities, due to their different nature (e.g. scientific paper analysis vs. SPSS lab) and different tools used, were also part of the courses' curricula. Table 2 shows mean scores for such activities. It can be seen that all received the mean values between 3.9 and 5.0 meaning that participants rated them as positive or very positive activities overall.

Table 2 Mean scores of individual non-comparable activities in each course

Day	Rail Timetabling		Day	Rail statistics		Day	Rail Freight	
	Activities	Mean scores		Activities	Mean scores		Activities	Mean scores
Day 2	Afternoon exercise	3.9	Day 1	Group exercise 2	4.3	Day 3	Lectures	4.3
Day 3	Lectures	5.0		SPSS lab	4.3	Day 4	Lectures	4.3
	Group exercise	4.3	Day 2	Afternoon exercise	4.6		Group exercise	4.0
				SPSS lab	3.8	Day 5	Lectures	4.5
							Group exercise	4.4

4.2 Personal experience

Respondents were asked to evaluate their personal experience of attending the courses. Figure 3 displays mean scores for five aspects related to knowledge and skills improvements as well as some aspects of teamwork.
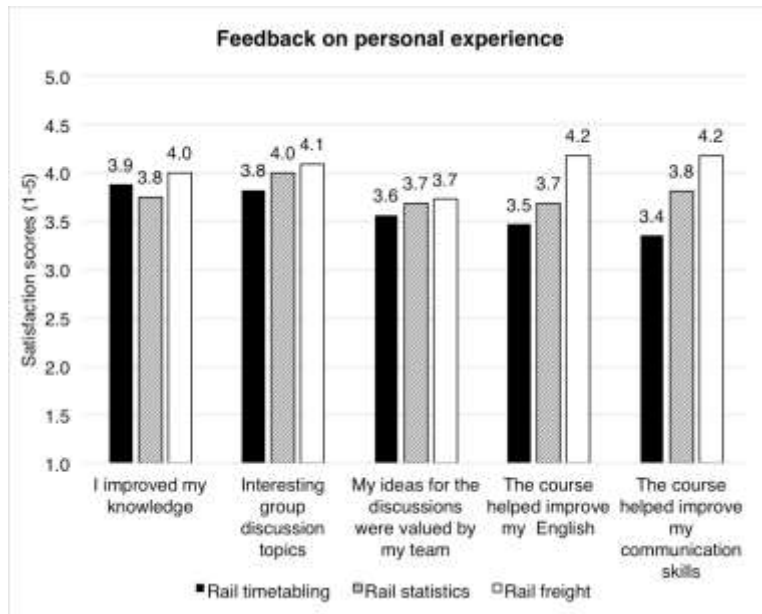

Figure 3 Mean scores for personal experience from the three courses

Rail Freight generally received the highest mean scores (3.7-4.2) on all aspects of personal experience compared to the other two courses, with the aspect of a team valuing a respondent's ideas being equal to that of the Rail Statistics (3.7). Rail Statistics received the second highest mean scores overall which are positive or close to positive (3.7-4.0). The group discussion topics were thought to be very interesting and well received by the participants from every course, as they were rated positive (3.8-4.1). There are some differences on the mean scores between Rail Timetabling and Rail Freight on how the courses helped participants improve their English and communication skills. While Rail Freight received one of the most positive feedback on these two aspects (4.2), Rail Timetabling however received the lowest scores on both aspects (3.4-3.5). This could be explained by the fact that Rail Freight was the only 5-day course out of the three evaluated, so participants had more time and opportunity to practice their (English and communication) skills.

Overall, the evaluation of the personal experience improved over time with the first course (Rail Timetabling) getting the lowest scores (3.4-3.9) and the last course (Rail Freight) receiving the highest notes (3.7-4.2).

5.3 Academic experience

Academic experience was evaluated separately from personal experience issues and results are displayed on Figure 4. The 3-day Rail Timetabling course received the most positive feedback (4.3) on the 'number of hours taught' whereas the 5-day Rail Freight course was given the lowest score (3.7). This shows a clear message to the organisers that a 5-day short course is probably too long and a 3-day course is preferred in this context. There is also a difference between Rail Statistics and Rail Freight

results on 'the capabilities and expertise of the lecturer', where Rail Statistics received the highest mean score (4.3) whereas Rail Freight received the lowest (3.6), although the same lecturer scored higher (4.2) for Rail Timetabling course delivery. Most of the participants from Rail Statistics commented that this course had helped them to better analyse data by using the new methods introduced by this course. The majority of the participants from Rail Timetabling also commented that they were very pleased with expertise of the lecturer who was able to explain difficult material in a way that was easy to understand.

Overall, quality of teaching was evaluated positively (3.8-4.2), however the expected learning outcomes, especially for Rail Statistics (3.6), could have been improved. The lowest mean scores (3.6-3.7) were given to evaluate the equipment used, which was mainly computer & screen, whiteboard, and paper-based handouts.
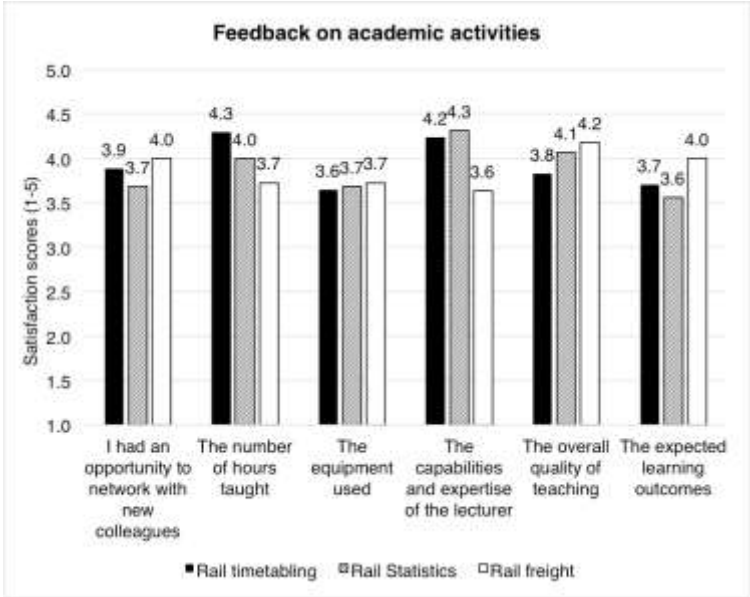

Figure 4 Mean scores for academic activities from the three courses

5.4 Respondents' recommendations for future courses

Next, the respondents were asked about feedback on items received as well as recommendations they could offer to the organisers who would like to run similar courses in the future.

5.4.1 Items received

One issue that should be improved on is preparation of the handouts. Some of the common issues faced by the participants from all three courses, particularly the Rail Timetabling, were handouts not being handed in advance for preparation and hard to read. This aspect sparkled discussions between the organisers even before the courses' started. It was expected by Thai partners that a lecturer will provide content of lectures (slides) in advance for distribution among the participants. This practice was however questioned by the UK lecturer who argued that this practice is not common in the UK and moreover, not recommended by the Higher Education Academy who trains lecturers. This issue was recognised as an interesting difference in teaching practices in the two countries, and low scores for the 'handouts' item, presented in Figure 5, reflect that.

Feedback on a free lunch and free coffee breaks was positive across the three courses (mean scores above 4.0).
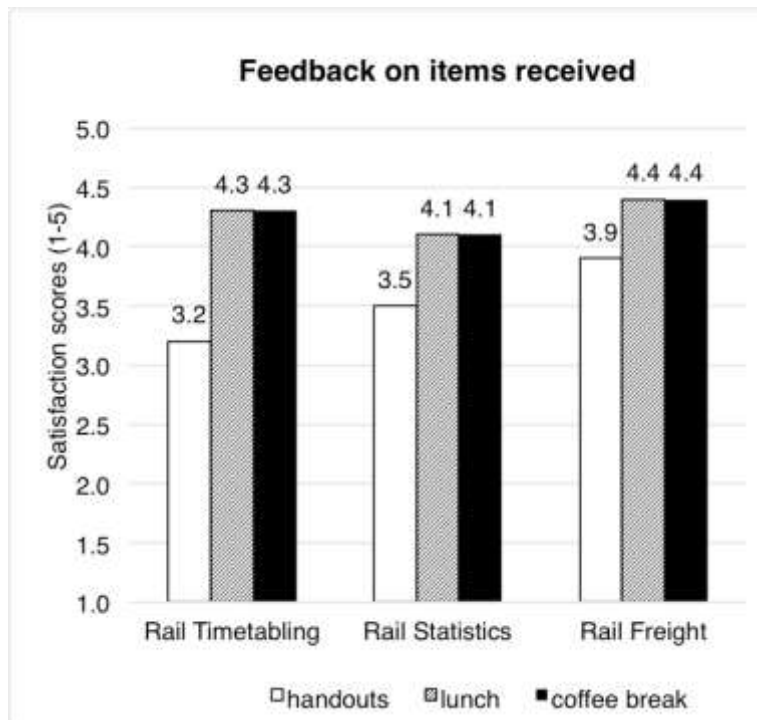
Figure 5 Mean scores on items received

5.4.2 Suggested improvements

Next, the respondents were asked what could be improved in terms of teaching and learning methods used in delivery of similar courses in the future. The results displayed in Table 3 focus on four aspects of: lectures, group discussions, individual research projects and technical visits.

Firstly, a great majority (70% or more) of respondents agreed that more lectures delivered by external guests would enrich the overall experience. It could be also expected that variety of lecturers, with their different personalities and delivery styles, could give participants wider insights into the topics covered as well as address various learning needs.

Secondly, more group discussions would be preferred by majority of respondents who had few opportunities only to engage in small group work (especially in the Rail Timetabling and Rail Statistics courses).

Thirdly, overall over half of respondents agreed that individual research projects would be a good activity within the course. However, this recommendation must take into account duration of a new course and what types of individual projects are realistically deliverable in the time frame given.

Finally, a great majority of respondents across the three courses agreed that (more) technical visits would enrich the course delivery. Due to the fact that the three courses had a limited time frame (2-5 days) and a limited budget, only 1-day technical trip was organised to two port facilities near Bangkok. In the future more technical visits would benefit course participants and give them exposure to the real-life and real-scale rail facilities.

Table 3 Recommendations for future courses

Short course title	More lectures from different organizations		More group discussions		Individual research projects		Technical visits	
	Yes	No	Yes	No	Yes	No	Yes	No
Rail timetabling (n=17)	15	1	10	6	9	6	13	2
Rail statistics (n=12)	12	-	10	1	7	4	10	1
Rail freight (n=10)	7	3	5	5	6	4	9	1

5.4.3 Recommendation to a colleague

Finally, in order to determine how successful the three courses were the participants were asked if they would recommend the courses to their colleagues and if they plan to participate in a next course. The amount of participants who were willing to recommend their courses (e.g. 10 out of 12 for Rail Statistics) outnumbered those who refused (e.g. 2 out of 12 for Rail Statistics) in all the three courses, as visible in Table 4. It could be assumed that the three courses were successful as a great majority (over 80%) of the respondents found it worthy to recommend to a colleague. The numbers of respondents in the three courses who plan to participate in a next course are also much higher (77-100%) than those who are uncertain or definitely not participating. However, it is important to keep in mind that not everyone who took the survey answered this question; for example, only 13 out of 17 respondents from the Rail Timetabling course answered this question on the survey, and that the total amount of participants who took the survey vary from each course and does not total to 100% of a course attendance.

Table 4 Recommendation to a colleague and future participation

A short course name	Recommend to a colleague		Planning to participate next course		
	Yes	No	Yes	Uncertain	No
Rail timetabling (n=17)	11	2	10	1	2
Rail statistics (n=12)	10	2	10	-	-
Rail freight (n=10)	10	1	11	-	-

6. Conclusions

The paper presented evaluation of feedback collected from participants who attended three independent short courses delivered at MU in 2017 as part of RailExchange project activities. The feedback given was analysed and highlighted a number of improvements and recommendations for organisation of similar courses in the future, as presented in Section 5.

As a conclusion it can be seen that higher education in Thailand is changing and academics are setting up collaborations with partners beyond the country to learn from their experience in order to improve the quality and efficiency of teaching and learning. International collaborations and projects like RailExchange give Thai academics exposure to different approaches to student learning and give them opportunity to observe and test new course delivery methods.

From an ASEAN perspective it can be observed that the TQF is a must in Thailand and the AUN-QA is MU's direction and an end goal. ABET is the engineering professional direction applied within the MU Engineering School. CDIO is the sharing consortium among the engineering faculty and faculty members. This has happened since most of the professors tend to be experts in research and knowledge, but not teaching or business practice. In addition to the well-established sharing consortium, there are additional informal consortia. The concepts of 'grits' and 'contemplative education', which focus more on the student awareness and inspiration, are gaining popularity via the informal consortium among university professors in Thailand. This should be taken into account in the development and delivery of the new programme in rail.

7. Recommendations

The three main recommendations dedicated to organisers of similar (rail) courses in the future, as well as to new (rail) Master programmes, are as follows.

Firstly, it is important to design an interesting outcome-based curriculum and while delivering it use variety of teaching and learning methods, including both passive lectures, but more importantly, active exercises and hands-on activities that will allow participants to apply their knowledge into a simulated situation immediately and practically. New curricula should be designed in a way that they address the outcome-based approach.

Secondly, it is a good practice to engage with industry and external parties by inviting them to the classroom to deliver lectures but also to host technical visits for a course participants and share a professional perspective on topics discussed during a course. It is also vital for the industry to be involved in a course curriculum and planning activities from an early stage so that their valuable input can be considered and implemented for the benefit of future graduates.

Thirdly, it is often expected to prepare a course material for a course participants and distribute it either in advance or after the course as this will facilitate their learning process and help digest the curricula more smoothly, especially when lectures/classes are delivered in a different language than the students' mother tongue. Internally, MU promotes using 'Google Classroom' as a tool when distributing the lectures and graduates' assignments. In addition, some lecturers promote contact with and between students via social media (e.g. Facebook, Line) to encourage interaction in the classroom.

This sort of arrangements should be discussed in advance of a course/programme delivery and meet students' expectations as well they should be in line with an institution's policies.

References

ABET (2017) ABET for Engineering Accreditation. ABET self-study questionnaire: template for a self-study report Masters level. Available at http://www.abet.org/accreditation/self-study-templates Accessed 28 August 2017

AUNQA (2015) Guide to AUN-QA assessment at programme level version 3.0.
Available at http://www.aunsec.org/pdf/Guide%20to%20AUN-QA%20Assessment%20at%20Programme%20Level%20Version%203_2015.pdf Accessed 28 August 2017

Bos, S (2002) Implications for Teaching and Learning The Brain, Published by Community Works Press. Brattleboro, Guilford Central School, Vermont, Copyright 1998-2002.

CDIO (2017) CDIO. Available at http://www.cdio.org Accessed 28 August 2017

Contemplative Mind (2017) ACMHE. Available at http://www.contemplativemind.org/programs/acmhe Accessed 28 August 2017

Effie Mac, L, Soden, R (2003) Expertise, expert teaching and experienced teachers' knowledge of learning theory. In: Scottish Educational Review, Vol. 35, No. 2, p. 110-120

Fraszczyk, A, Dungworth, J, Marinov, M (2015a) Analysis of Benefits to Young Rail Enthusiasts of Participating in Extracurricular Academic Activities. Social Sciences 4 (4), 967-986

Fraszczyk A, Dungworth, J, Marinov, M (2015b) An evaluation of a successful structure and organisation of an intensive programme in rail and logistics. Proceedings of the 3rd UIC World Congress on Rail Training, April 2017, Lisbon, Portugal

Fraszczyk, A, Drobisher, D, Marinov, M (2016) Statistical analyses of motivations to participate in a rail focused extra-curricular activity and its short terms personal impacts. OSCM, December 2016, Phuket, Thailand

Haggis, T (2003) Constructing Images of Ourselves? A Critical Investigation into 'Approaches to Learning' Research in Higher Education. British Educational Research Journal, 29, 1, 89-104

Marinov, M, Fraszczyk, A (2014) Curriculum Development and Design for University Programmes in Rail Freight and Logistics. Procedia-Social and Behavioral Sciences 141, 1166-1170

Marinov, M, Fraszczyk, A, Zunder, T, Rizzetto, L, Ricci, S, Todorova, M, Karagyozov, K, Trendafilov, Z, Schlingensiepen, J (2013) A supply-demand study of practice in rail logistics higher education. Journal of Transport Literature 7 (2), 338-351

Marinov M, Lautala P, Pachl J, Edwards R, Reis V, Macario M, Sproule W, Barkan C (2011) Transatlantic Cooperation in Railway Higher Education (TUNRAIL): Handbook for Railway Higher Education, Atlantis Programme, EU-US

MUA (2017) National Qualifications Framework for Higher Education in Thailand: Implementation handbook. Available at
http://www.mua.go.th/users/tqf-hed/news/FilesNews/FilesNews8/NQF-HEd.pdf Accessed 28 August 2017

Price, G, Maier, P (2007) Effective Study Skills: Unlock your potential, Harlow, Pearson

Railway Talents (2017) RailUniNet. Available at www.railtalent.org Accessed 16 August 2017

Weedon, E, Riddell, S (2009) Towards a Lifelong Learning Society in Europe: the Contribution of the Education System (LLL2010), Sixth Framework funded European project