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## **An evaluation of a successful structure and organisation of an intensive programme in rail and logistics**

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### Article Information

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### Abstract

#### Purpose:

*The paper examines the organisation of an intensive programme in rail and logistics, teaching and learning methods used and discusses feedback related to organisational issues received from students participating in the programme in 2012, 2013 and 2014.*

#### Method:

*Each of the three editions of the programme evaluated in the paper ended with a student survey completed by all participants. The survey focused on students' academic and personal benefits gained from the programme and analyses of the results related to the organisational side of the programme are presented in the paper.*

#### Result:

*The analysis of results revealed that the programme overall received a very positive feedback from students participating in all three editions evaluated. The duration and dates of the programme and support received before and throughout the programme scored on average 4 or more each year on a scale from 1 to 5 with 1 being "Very Poor" and 5 being "Very Good".*

#### Discussion & Conclusion:

*The three editions of the intensive programme in rail and logistics, which took place between 2012 and 2014, all have been evaluated positively by students in terms of organisation and support. The only organisational issue highlighted as requiring improvements was the accommodation and this issue should be considered by the organisers in the future editions of the programme.*

## 1 Introduction

An intensive programme approach in rail and logistics education is an innovative form of teaching and learning [1][3]. The programme employs variety of educational tools to introduce students to the principles of railways and to facilitate their new academic and personal skills development (see Section 2 for details). The three-week programme started in 2012 and had three editions since. Each edition welcomed approx. 50 students, both undergraduates and postgraduates, and approx. 20 professors, with majority participants being from Europe. Higher institutions involved in the programme represented ten countries, namely: Belgium, Bulgaria, Germany, Greece, Italy, Poland, Portugal, Romania, Turkey and the United Kingdom.

The original aim of the programme was to improve railway knowledge exchange between European institutions. More specifically, the objective of the programme was to bring students from various backgrounds (engineering, social sciences, economics, etc.) into one classroom, accommodate their research-based learning process and create knowledge exchange opportunities for all, which will benefit railway sector in the future [2].

## 2 Organisation of the programme

The programme blended a series of unique teaching and learning methods [5]; all of which helped students with different learning abilities and styles, with various educational backgrounds and language skills to understand the rail and logistics industry better and gain new skills [4].

Each of the three editions of the programme, held in 2012, 2013 and 2014, had a similar structure. The programme began with lectures (see tab. 1), five per day and 45 minutes each, from railway experts representing various European academic and industry institutions and was followed by discussion and mentoring sessions during the first week. The students were then split into small multinational and multidisciplinary groups lead by professors to research a rail related topic for full five days in week two. The participants had access to computer clusters equipped with access to the Internet and to international databases of scientific journals. By the end of week two each group of students was expected to produce three deliverables: a research report, a research poster and a group presentation which they then displayed with an audience of their peers and industry experts on the third week. The final week also included rail-related interactive

workshops, technical visits and networking events with railway industry representatives.

Day	2012 Lectures	2013 Lectures	2014 Lectures
1	Logistics and Supply Chain Management	Logistics and Supply Chain Management	Rail Transport, Logistics and Supply Chain Management
2	Rail and Multimodal Transport	Multimodal Transport and Energy	Rail, Multimodal Transport and Energy
3	Rail Infrastructure and High Speed Rail	Rail Infrastructure, High Speed Rail and ITS	Rail Infrastructure, High Speed Rail and ITS
4	Vehicles, Environment and Safety	Rail Vehicles, Safety and Security	Rail Vehicles, Safety and Security
5	Rail Operations, Timetabling and Control	Rail Operations, Timetabling and Control	Rail Operation, Traffic Control and the Environment

Tab. 1 Thematic areas of each edition of the programme.

### 3 Methodology

At the end of each edition of the programme students were asked to complete a paper-based survey asking them to evaluate their academic and personal experience of participating in the programme. They were asked to share both positive experiences and areas in which the programme could be improved.

The number of students who completed the feedback survey for each year was as follows: 49 students in 2012, 66 students in 2013 and 40 students in 2014. The majority of students were Stage 3 or Stage 4 undergraduates or postgraduates, however the sample from 2013 included 16 academics from Thailand who participated in the programme as students.

### 4 Analysis of Results

Although the survey included over 30 open-ended and closed questions related to both academic and personal experience of the programme's participants only the analysis of results related to the organisational issues of the programme are presented in the paper.

#### 4.1 Duration of the programme

Participants were asked to rate how satisfied they were with the duration of the programme where each edition lasted three weeks. They had to rate it on the scale of 1-5 with 1 being "Not at All" satisfied and 5 being "Very Much" satisfied.

Fig. 1 shows the distribution of the ratings given by students in 2012, 2013 and 2014. It can be seen that between 86% and 70% of the students were happy with the duration of the programme. Nobody was "Not At All" satisfied with the duration of the programme but 2% in 2014 and 6% in 2012 rated it 2; in 2013 nobody rated the duration below a 3.

Overall, there is very little difference in the evaluation results presented between the three years, this is likely because the duration of the programme was three weeks for all of them. The positive feedback show that the three week programme works well and should continue although there were a few comments asking for the programme to be extended by a week.

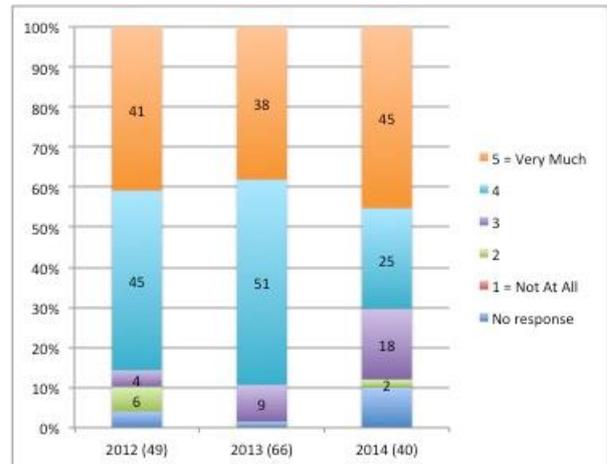


Fig. 1 Satisfaction with duration of the programme [%].

#### 4.2 Dates of the programme

Students were asked how satisfied they were with the dates of the programme, rating it from 1-5 with 1 being "Not at All" satisfied and 5 being "Very Much" satisfied. Each edition of the programme started in late June and finished in mid-July.

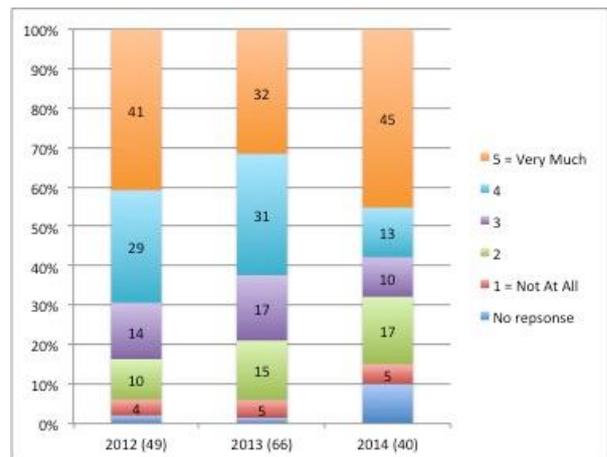


Fig. 2 Satisfaction with dates of the programme [%].

The response for all three editions can be seen on fig. 2, as shown 2014 had the most students giving a rating of 5 as 45% of students were very satisfied with the dates of the programme. In 2014, however, ratings of 1 or 2 were 22% altogether, which was the highest number compared to previous years showing that opinions were split. Students from Germany and Italy expressed the majority of negative opinions as the dates of the programme collided with their exam periods at home institutions therefore the students were not happy about that. Overall, the mean rating is close to 4 and this shows the dates were well timed and most people found them more than satisfactory.

#### 4.3 Sources of information

The students were asked if they had heard about the programme from various sources these were: Home institution, Host institution, Other students, Former participants and Internet.

Fig. 3 shows the percent of students who heard about the programme through each source for all three editions. The participants were able to select more than one source so the data will not total 100.

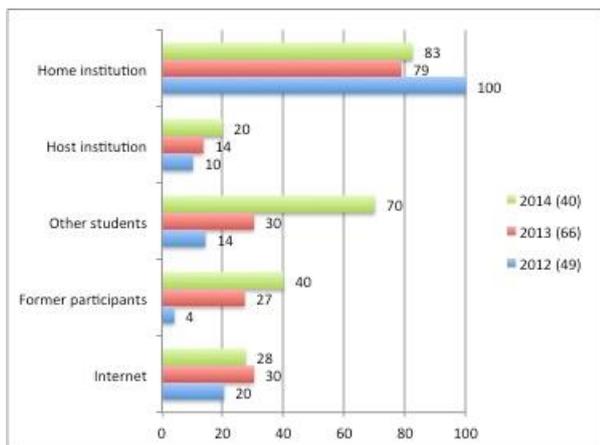


Fig. 3 Sources from which participants heard about the programme [%].

In 2012, as it was the first edition of the programme, the only way to have found out about the programme was through student's home institution. It was still the primary way of hearing about the programme in 2013 and 2014. However, 2014 results revealed a surprise increase in the amount of students hearing about the programme from other students; over doubling from the 2013 data. A large amount of students also heard about the programme from former participants, which shows the power of the programme's informal network of alumni.

#### 4.4 Support before and during the programme

Participants were also asked to rate the support they received from the host and their home institution before and during the programme. They were given a scale from 1 to 5 with 1 being "Poor" and 5 being "Excellent". Fig. 4 and fig. 5 show the distribution of ratings for home and host institution for the three editions of the programme.

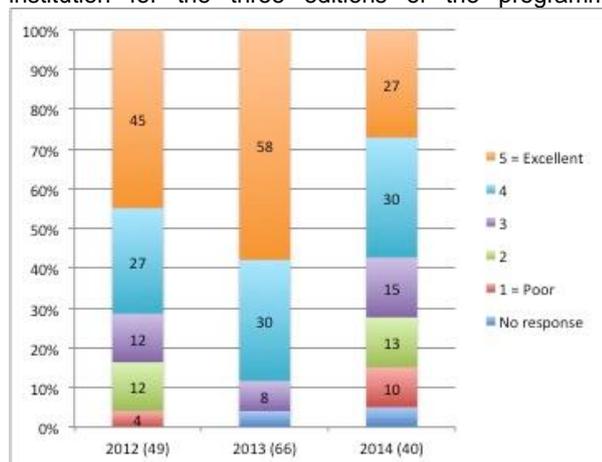


Fig. 4 Quality of support (home institution) [%].

In 2014 the majority of students found their home institution offered at least a good level of support, despite this the votes are not as positive as they were in 2012, in 2013 no one found the support below average whilst in 2014 23% voted below 3.

In 2014 the response for the host institutions support was much more positive, 80% of the students found that the support was at least good and only 15% found it worse than that, no one thought the support was poor. Although a large

portion of students found the support at least good, the numbers of "Excellent" ratings decreased throughout the years.

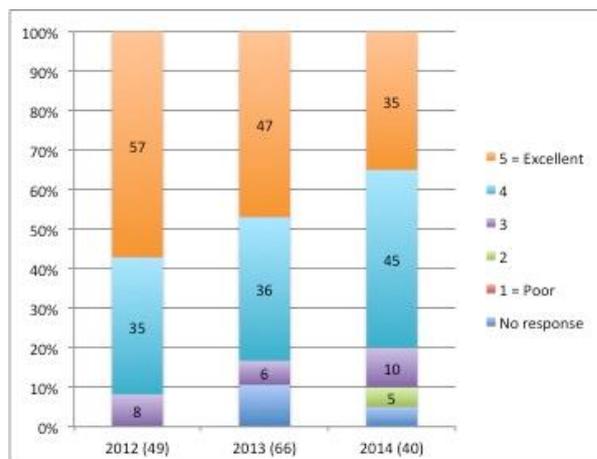


Fig. 5 Quality of support (host institution) [%].

Overall the data shows that the support provided is satisfactory although the participating institutions should try and give more information and support to their students before and during the programme.

#### 4.5 Accommodation

Students were asked to rate how happy they were with the accommodation rating it from 1-5 with 1 being "Not At All" and 5 being "Very Much" satisfied. In 2012 majority of students stayed in a university accommodation (individual rooms), in 2013 in a hostel (shared rooms) and in 2014 in a different university accommodation (individual rooms).

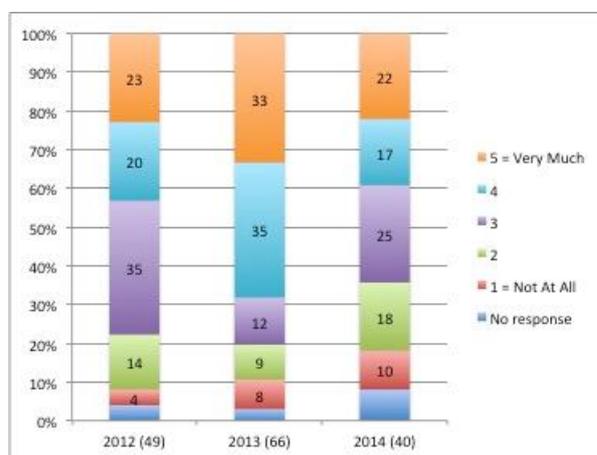


Fig. 6 Satisfaction with Accommodation [%].

Fig. 6 shows the distribution of ratings in 2012, 2013 and 2014. It can be seen that the 2014 results are very similar to the 2012 results, it felt from the levels it was at in 2013. In 2012 43% of students gave the rating of 4 or 5, this is in comparison to 68% in 2013. This shows that students received the preferred accommodation in 2013, even though the rooms and other facilities were shared. This result points to the differences between the quality of the aging university accommodation vs. brand new hostel accommodation and perhaps to different nationalities expecting different levels of quality, although this aspect requires further investigation.

#### 4.6 Support materials

The students were asked to rate the materials they received during the programme. They rated three items: Teaching Material, Welcome Pack and Survival Guide on a scale from 1-5 with 1 being "Very Poor" and 5 being "Very Good". The Survival Guide was a PDF document describing the programme in terms of accommodation, food prices, tourist attractions, etc. and was shared with all participants few months before the arrival. The Welcome Pack was a bag of printed materials advertising the programme, the university and various tourist attractions in the region accompanied with a city map and a pen and was received by all participants on day one of the programme. The teaching materials included: Power Point slides from week one lectures saved on a USB stick and some hand-outs from selected lectures and were distributed on day one of week two of the programme.

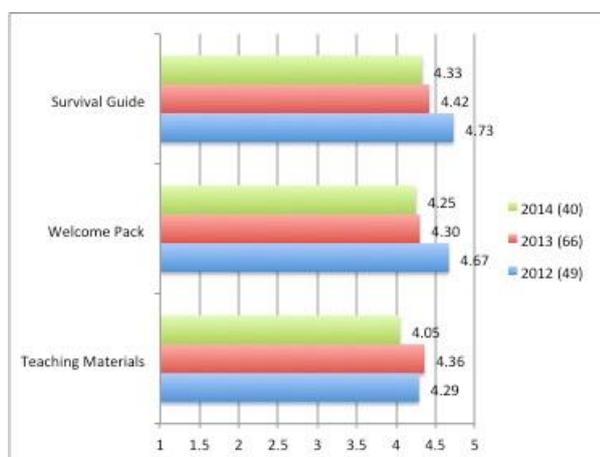


Fig. 7 Mean rating for the materials received during the programme.

Fig. 7 shows the mean rating from 2012, 2013 and 2014 for all materials. The rating is mostly consistent and all ratings are above a 4. This shows that the students were happy with the support materials they received, although the results for 2012 and 2013 are slightly more positive than the results for 2014.

#### 4.7 Summary

Students who participated in the three editions of the programme were generally happy with the organisation of the programme and support received. The result presented in the paper are fairly similar for 2012, 2013 and 2014. Majority of the participants evaluated the duration and the dates of the three editions of the programme positively. Also, support received from home and host institutions over the years was mainly positive and the support materials received were appreciated by participants. Accommodation however received a mixed feedback throughout the years and has been identified as a weak point within the organisation of the programme.

### 5 Conclusions

The analyses of the student feedback on organisation of the intensive programme in rail and logistics revealed a number of positive areas as well as few areas requiring improvements.

Firstly, each edition of the programme attracted approx. 50 participants from various countries and offered a unique

programme of activities focused on research-based teaching in multicultural and multidisciplinary environment. A good level of attendance as well as a good number of scientific publications based on students research work (e.g. a Special Issue of Transport Problems Volume 9 in 2014) is the evidence that the three-week structure of the programme facilitated a production of basic railway research papers of publishable quality.

Secondly, majority of the students were happy with the three-week duration and dates of the programme, although some students highlighted conflicts with their home institutions' timetables. It is worth realising that multicultural teaching and learning environment where students from various institutions attend the same programme at the same time is a logistics and timetable challenge which sometimes needs to be addressed at an institutional, but also at a personal level.

Thirdly, an informal network of the programme's alumni is a knowledgeable source of information for prospective students and the organisers should consider how to best use this channel to promote the programme in the future. Social media can play a crucial role in staying in contact with the alumni and keeping them aware of the future editions of the programme.

Fourthly, the teaching and learning facilities offered by the organisers, which included a lecture theatre in week one and a computer cluster and meeting rooms in week two, addressed the needs of the students participating in the programme well, although improvements in terms of a better heating/cooling system in the room and reductions in the levels of external noise heard in the room are recommended.

Finally, one of the areas highlighted in the survey that could benefit from some improvements is the accommodation provided to the students as many voiced their dissatisfaction, especially in 2014. Although accommodation is strongly dependent on funding available it might be an option for future editions of the programme to give students a chance to choose their accommodation in advance from various options provided.

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