FPP & ITL

Intellectual Output 4 – A4.7: Evaluation Report of the Summer Logistics School (SLS)

Document information	
Duration	13.3.2019-
Organisation name of lead contractor for this deliverable	FPP & ITL
Version	3

Title: Intellectual Output 4 – A4.7: Evaluation Report of the Summer Logistics School (SLS)

Editors: Dr. Patricija Bajec, Dr. Violeta Jurkovič

Place of publication: Portorož

Publisher: Faculty of Maritime Studies and Transport, University of Ljubljana

Year of publication: 2019

Developed as a part of the Summer Logistics School (SLS) project.

The Summer Logistics School (SLS) project has been funded by the European Commission, Erasmus+.

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

37.018.53-047.44(047)

INTELLECTUAL output 4 - A4.7: evaluation report of the Summer Logistics School (SLS) / [editors Patricija Bajec, Violeta Jurkovič]. - Portorož: Faculty of Maritime Studies and Transport, 2019

ISBN 978-961-7041-05-7
1. Bajec, Patricija
COBISS.SI-ID 302534400

Table of Contents

1 Executive Summary

The aim of activity A4.7 is to evaluate the quality and effectiveness of the Summer Logistics School (SLS), which includes the training programme, the trainers, and SLS organisation. The evaluation guidelines, the applied methodology, and the results of the evaluation presented in this document aim at answering the following questions:

(1) **WHO** was evaluated (participants, trainers, training programme, infrastructure, equipment)?

(2) **HOW** was the evaluation conducted (questionnaire for the collection of quantitative and qualitative data, interviews for the collection of qualitative and quantitative data)?

(3) **WHERE** did the evaluation take place (in the classroom, at participants' institutions)?

(4) **WHEN** was the evaluation conducted (prior to the training, during the training, after the completion of the training)?

(5) **WHAT** are the evaluation results?

A multi-stage approach was used to prepare the present document:

1. The guidelines for evaluating the training programme were prepared by the Faculty of Maritime Studies and Transport of the University of Ljubljana (UL FPP). Then these guidelines were evaluated by the other three core partners in the project: the Institute for Transport and Logistics (ITL), the Faculty of Transport and Traffic Sciences of the University of Zagreb (FPZ), and AFT Transport Logistique (AFT).
2. Each core partner was in charge of the analysis and preparation of one of the evaluation guidelines' elements, which was then reviewed by all core partners.
3. All collected data were analysed by UL FPP and presented to all partners.

The benefits of this kind of evaluation report are threefold:

- The proposed evaluation framework can be replicated for the evaluation of similar logistics schools or training programmes;
- The proposed evaluation templates can be used as a complete set or in isolation for the evaluation of individual elements of similar logistics schools or training programmes;
- The evaluation results will enable future revisions of the existing SLS training programme, SLS organisation, the selection of trainers, and other SLS elements.

The first chapter provides an introduction to the evaluation: its purposes, types, and units. The second chapter elaborated on the details concerning the evaluation methodology adopted for SLS, including ex-ante, mid-term, and post-term evaluation. The results are presented in the third chapter. These are followed by the recommendations for future SLS editions and the conclusion with ideas for future research studies or projects. All templates used in the SLS evaluation process can be found in the annexes.

2 Introduction to the Guidelines for SLS Evaluation

Evaluation is a systematic process adopted to determine the quality and effectiveness of SLS. Although it may seem the last stage of SLS, it has been an ongoing activity during the entire duration of the SLS project.

The present evaluation report of the pilot edition of SLS includes both formative and summative evaluation. Importantly, summative evaluation in the form of achieving or not achieving the pre-set key performance indicators (KPIs) started at the very beginning of the project.

This section will now present the purposes of evaluation, the types of evaluation, and the units of evaluation.

2.1 Purposes of Evaluation

SLS evaluation has three purposes. Each requires different types and modes of evaluation:

- **A developmental purpose** – following the training modules (TMs) process and supporting the different participants involved in evaluating the performance and results of each TM, whether the TMs are 'on track' or need to be modified.
- **An accountability purpose** – understanding whether SLS goals have been achieved, including an evaluation of the extent to which SLS has achieved its intended objectives and outcomes.
- **A learning purpose** – assessing the transferability of the SLS project results to similar initiatives in the future and contributing to supporting the replication and sustainability of the project's innovations (TRAILS 2019).

2.2 Types of Evaluation

Evaluation can be described as either **formative** or **summative**. Each type has a different purpose and slightly differs from the other (Morra Imas and Rist 2009). Formative evaluation is provided during the training. It can also be called "mid-term" observation. It aims to monitor the participants' learning process and, consequently, to provide ongoing feedback that can be used by the trainers to improve their teaching and by the participants to improve their learning. Summative evaluation ("ex-ante" and "ex-post") is applied at the beginning and/or at end of a training unit or training programme. Based on the evaluation of the achievement of programme objectives, it aims to make judgments about programme adoption, continuation, or expansion.

Both formative and summative evaluation play an important role in SLS evaluation. As a whole, they were conducted throughout the duration of the project, from the initial phases to the final implementation of the pilot edition of SLS. Based on the formative evaluation results, some TM structure, content, methodology, and/or length were modified during SLS implementation. On the other hand, summative evaluation results highlight SLS strengths and weaknesses, which will be useful for future SLS editions or analogous summer logistics schools.

2.3 Units of Evaluation

The units of evaluation were **SLS organisation**, each **Training Module - TM** (**trainers**[1], **students**[2], **teachers**[3], **teaching material**), and **teaching methodology** (**Figure 1**). In addition to the participants' feedback (students and teachers), the evaluation includes feedback from the classroom observers and trainers, and an external evaluator[4]. Its main task was to provide an evaluation of the structure and pedagogical design of each TM (e.g. the proportion of the presented topics, the variety of teaching methods, or timing of lectures) as well as of the whole organisation of the SLS project.

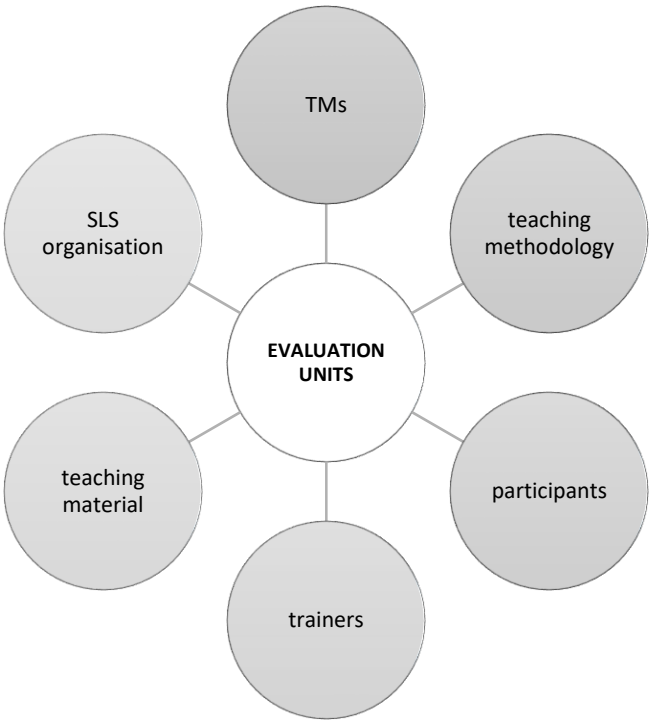

Figure 1. *Units of evaluation of SLS*

3 Evaluation Methodology of SLS

Having set out the overarching guidelines for SLS evaluation in the previous section, the second section discusses the evaluation methods that were used per each evaluation type (i.e. "ex-ante", "mid-term" and "ex-post") (**Figure 2**).

[1] Trainer – a person who trains SLS participants.
[2] Student – a VET student that attends SLS.
[3] Teacher – a teacher that attends SLS as a participant and not as a trainer.
[4] External evaluator – a person that has extensive knowledge in logistics and experience in curriculum design.

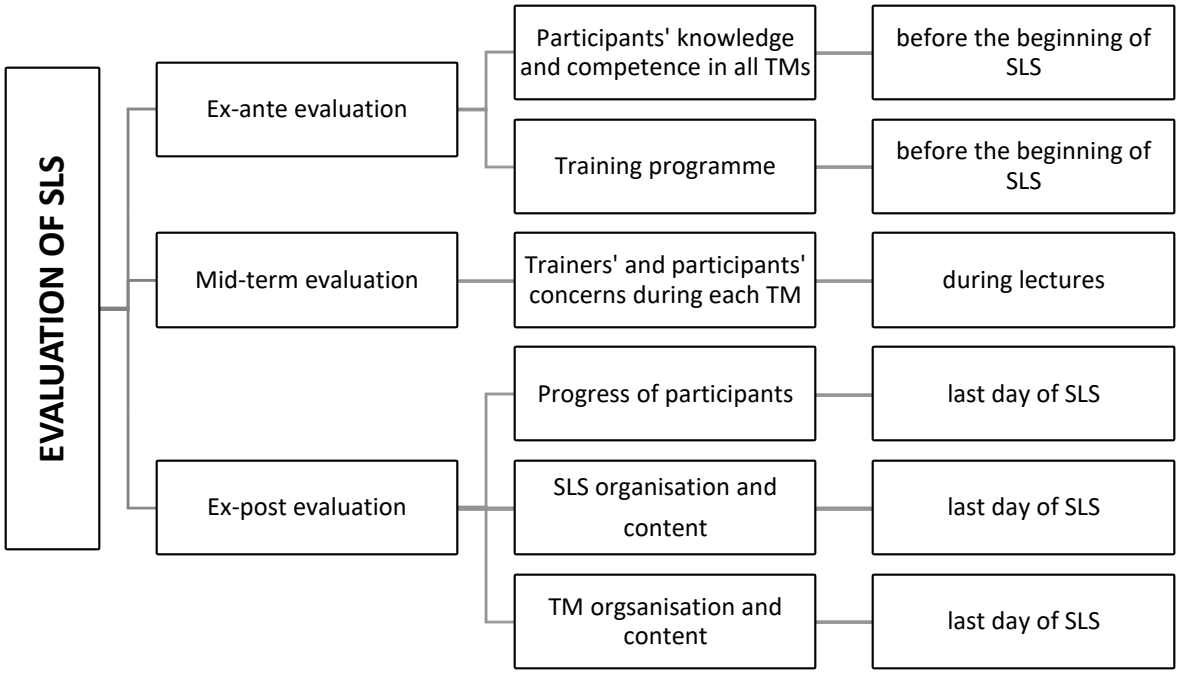

***Figure 2**: Evaluation methodology of SLS per each evaluation type (ISIG 2018)*

3.1 Ex-ante Evaluation

Generally, ex-ante evaluation implies the understanding of the state-of-the-art of the pre-existing situation and is essential for assessing the impact of an intervention. Applying this to SLS, ex-ante evaluation was used to:

- plan and prepare the training programme in order to ensure that it complies with the participants' requirements and knowledge levels, and meets their objectives;
- revise or re-design the TMs, if necessary, and
- examine the participants' knowledge of each TM before SLS (**Figure 3**).

In addition, ex-ante evaluation of the training programme was performed by an **external evaluator**, who evaluated all lesson plans for each TM.

The participating students' knowledge, skills, and competences pertaining to each TM before SLS were evaluated using an **online pre-test** (Annex 1) sent to all participating students one week before SLS. The participating teachers' knowledge, skills, and competences pertaining to each TM, teaching methods and tools (e.g., simulations, simulators, etc.) were evaluated using an **online pre-test** (Annex 2) sent to all participating teachers one week before SLS. Both pre-tests were developed by AFT and evaluated by all consortium partners (ITL, FPP, FPZ, and secondary schools).

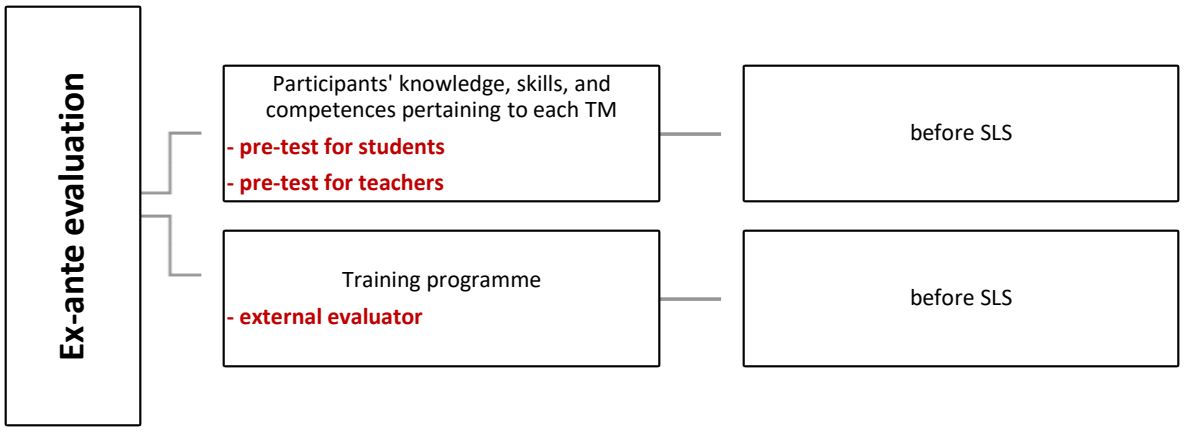

Figure 3. Ex-ante evaluation methodology

3.2 Mid-term Evaluation

Mid-term or in itinere evaluation was performed during the implementation of each TM by the appointed classroom observers, selected using the multi-criteria decision making method Analytic Hierarchy Process (AHP).

The aims of mid-term evaluation are to:

- monitor participants' concerns and explore potential problems during lectures (Hur and Suh 2010),
- ensure that the training is implemented as planned, and
- investigate areas for improvement over the remaining hours/days of training.

Classroom observations were conducted by two observers throughout the duration of each TM (**Figure 4**). The observations determined the areas that needed assistance and provided a better understanding of each class structure. In addition, classroom observations revealed whether trainers and participants collaborated well, whether the infrastructure and equipment were appropriate, etc. Structured classroom observation was conducted using the **Classroom Observation Template** (Annex 3).

In order to reduce subjectivity and improve the assignment of the ratings, two observers were provided for each TM. In general, the observer must have good English skills (listening, reading, spoken production and interaction), previous experience in teaching, and knowledge in innovative practices in the teaching process. The selection of the appropriate observer can be done using the multi-criteria decision making (MCDM) method Analytic Hierarchy Process (AHP) (Saaty, 1987; Saaty, 2008).

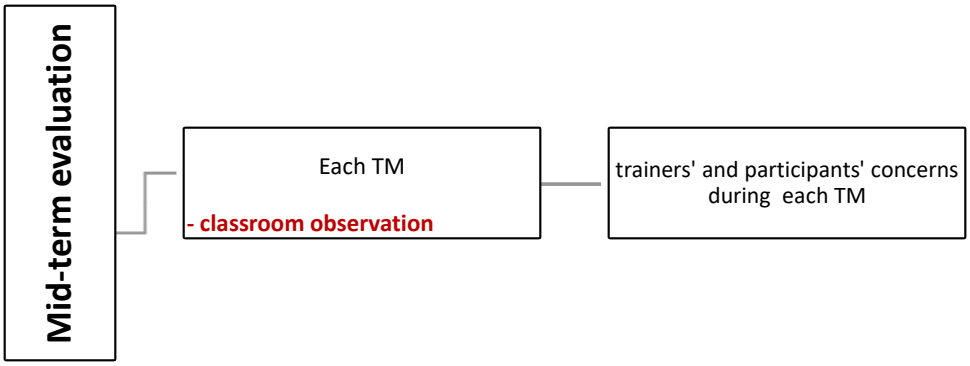

Figure 4: Mid-term evaluation methodology

3.3 Ex-post Evaluation

Ex-post evaluation was performed after the completion of SLS to:

- assess the progress in the participants' knowledge, skills, and competences in each TM, and
- suggest improvements for future editions of SLS or analogous summer logistics schools.

Post-tests for the participating students (Annex 4) **and teachers** (Annex 5) were conducted on the last day of SLS. The results of the post-tests for students examined students' progress in the knowledge, skills, and competences pertaining to each TM. The results of the post-tests for teachers examined the extent to which the participating teachers improved their logistics proficiency and their teaching methodology knowledge, skills, and competences.

An SLS evaluation survey (Annex 6) was administered to the participating teachers and students after the completion of SLS to examine their overall response to SLS (e.g., satisfaction with accommodation, usefulness of information and instructions provided by UL FPP before SLS, SLS timing, and each TM, among others), as shown in **Figure 5**.

Interviews with the trainers (Annex 7) were used to explore the experience and challenges experienced by the trainers, the issues and problems encountered during lectures, an evaluation of the outcomes associated with individual TM units or their TM as a whole, suggestions for improving lectures and upgrading TM content with new or different topics, etc.

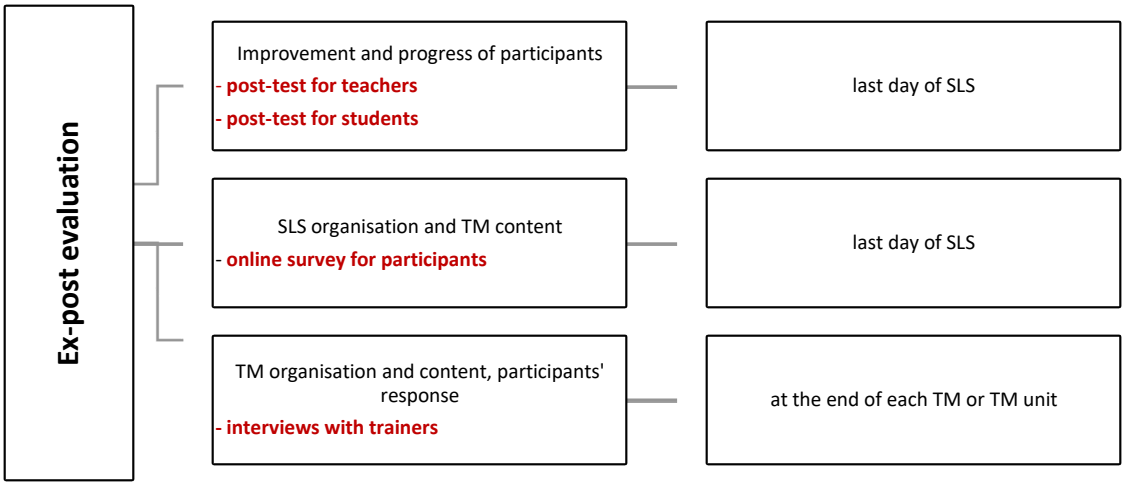

***Figure 5**: Ex-post evaluation methodology*

4 Results

This evaluation report aims at providing an integrated and comprehensive evaluation of SLS as a whole and each TM as a specific evaluation unit. As a result, in this section qualitative and quantitative data provided by different groups of participants at different time periods (ex-ante, mid-term, and ex-post evaluation) and using different data collection instruments have been triangulated and synthesised.

As mentioned, different groups of respondents provided the data used in SLS evaluation: the teachers and students that participated in SLS, their trainers, and the classroom observers of each TM unit. Table 1 shows the number of respondents per group and the response rate.

Table 1 : Response rate per instrument and respondent group

Instrument	Respondents	Total number	Responses received	Response rate (%)
Pre-test	Teachers	12	12[5]	100
Pre-test	Students	27	27	100
Post-test	Teachers	12	11	92
Post-test	Students	27	24	89
Participant survey	Teachers	12	12	100
Participant survey	Students	27	14	52
Interviews with trainers	Trainers	10	10	100

In addition, 16 classroom observation templates were completed.

Adopting the principle of proceeding from the broad to the specific, the analysis and presentation of data in this section are divided into the following subchapters:

- SLS general evaluation (content and organisation): data for this subchapter will be derived from the participants' survey and the interviews with the trainers.
- TM specific evaluation, further divided into three subsections for each TM (teaching and learning process, learning outcomes, and participants' satisfaction level): data for the evaluation of each TM will be derived from classroom observations, the pre- and post-tests for the participating students and teachers, the participants' survey, and the interviews with the trainers (**Figure 6**).

[5] The numbers of the participants that have completed the relevant pre- and post-test sections for elective TMs 2, 3, and 5 are stated in each respective evaluation section.

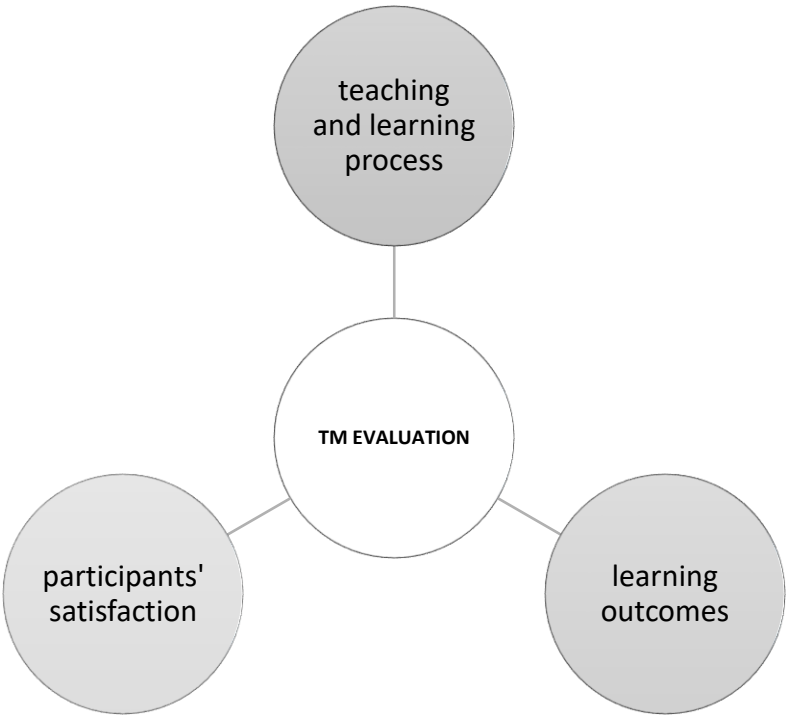

Figure 6 : TM evaluation elements

In addition to achieving relevant and high quality skills and competences in the field of logistics, the SLS project aimed at promoting open and innovative practices in a digital era, and introducing systematic approaches and opportunities for the initial and continuous professional development of VET teachers. As a result, a specific subchapter will be dedicated to the analysis and discussion of issues related to the adoption and promotion of innovative and student-centred teaching methods. The third subchapter in this section will thus focus on:

- SLS teaching methodology evaluation: data for this subchapter will be derived from the pre- and post-tests for the participating students and teachers, classroom observations, and the interviews with the trainers.

4.1 SLS Evaluation

This section will provide a general (i.e. not linked to any specific TM) evaluation of the content and organisation of SLS. Quantitative and qualitative data will be derived from two instruments: the participants' survey and the interviews with the trainers. Data from the participants' survey will be presented separately for the participating teachers and students, aiming at identifying the differences in the levels of satisfaction between these two groups of respondents.

A 5-point Likert-type scale (5 – strongly agree, 1 – strongly disagree) was used for the collection of quantitative data. Examples of qualitative data borrowed from open-ended questions or interviews have not been language-edited (with the exception of the removal of typos) in order to preserve their authenticity.

a. I am satisfied with the assistance and information provided by SLS organisers before SLS.

	Mean	Std. deviation
Teacher	4.50	0.522

Student	4.36	0.497
Trainers	5.00	0.000

The data indicate a high level of satisfaction of the respondents with the assistance and information provided before SLS. When asked to explain their opinion, the participating teachers and students emphasised the timeliness, conciseness, clarity, and accuracy of the received information, for example: "*The information was clearly provided and the assistance was great*."

In addition, the data show that all involved trainers too were highly satisfied with the assistance and information provided. The statement that best summarises the trainers' opinions is: "*I received all necessary information early before SLS, everything was clear for me. Patricija was very responsive when I had a question*."

b. The accommodation that was provided to us was appropriate.

	Mean	Std. deviation
Teacher	4.08	0.793
Student	4.07	0.616
Trainers	4.50	0.548

The respondents seem to have been very satisfied with the location of the hostel and the rooms. However, several respondents complained about the quality of the food, in particular insufficient provision of fruit and vegetables, for example: "*The quality of the room was very good, however food is not balanced and they do not serve any vegetables*."

Only two of the involved trainers stayed at the hostel arranged by the organisers. Their opinion on the quality of the accommodation matches that of the participants, for example: "*The accommodation is clean, the room is very good. However, the food could be better and more balanced*."

c. Overall, the knowledge that I previously had on the topics was adequate to participate in SLS.

	Mean	Std. deviation
Teacher	4.00	0.739
Student	4.21	0.579

Most respondents agree that the knowledge that they previously had on SLS topics was adequate to participate, the mean value being slightly higher among the students than their teachers. In their comments the respondents added that they could easily engage with SLS content. Interestingly, two participating teachers were not logistics teachers and did not have the anticipated knowledge and skills, for example: "*My knowledge was scarce because I am not a logistics teacher*."

d. The printed materials that I received at the beginning of SLS were useful.

	Mean	Std. deviation
Teacher	4.58	0.669
Student	4.50	0.519

The participants agree that the printed materials that they received at the beginning of SLS were useful. The printed material consisted in a SLS programme, each TM learning objectives, and a notebook. The

following statements summarise the opinions of most respondents: "*It was great, because you could easily follow the lessons given and make notes on the side*.", and "*These materials are a summary and a support to better understand the topic explained*."

e. The glossary of professional terms in English that I received before SLS was helpful.

	Mean	Std. deviation
Teacher	4.17	0.718
Student	4.07	0.829

Given that English is not the mother tongue of any of the participants but was the working language of SLS, we wanted to find if the respondents found the glossary useful, which they did. The reasons for this can be summarised as follows: "*A lot of those words were later explained but some of them it was good if you knew what they mean*.", "*I didn`t know all technical words, and now, I will be able to use this glossary for teaching*.", and "*The students could look up any words that they did not understand, and came more prepared to the SLS*."

f. I could easily understand and communicate in English with other participants during SLS.

	Mean	Std. deviation
Teacher	4.00	0.953
Student	4.43	0.646

Communicating in English during SLS seems to have been smooth, even more so among the students than the teachers, as the mean values indicate. Nevertheless, some participants did experience some problems because of the low level of their English or that of some other participants: "*I cannot express opinions because my knowledge of English is beginner*.", "*I could easily understand other participants, but it was more difficult to communicate (my English language is too poor). I should have best prepared this week*.", and "*It was easy to communicate but some of the participants didn't knew how to speak English very well so it has hard to communicate*."

g. The training programme of SLS met my needs.

	Mean	Std. deviation
Teacher	4.33	0.651
Student	4.21	0.802

Both groups of respondents agree that the SLS training programme met their needs. In their comments they emphasise a variety of elements that they found particularly relevant, for example teaching methods and contacts with teachers from other countries: "*I gained new contacts with foreign teachers, for the exchange of our students, also I learned new teaching methods*.", or higher awareness of what working in the field of logistics implies: "*It is interesting because the issues we work at our institute, now we have seen them: logistics, road transport, shipping* ..."

h. In your opinion, which knowledge, skills, methods you learned during SLS will be most useful in your future career?

This open-ended question was only designed for the participating students, who produced a variety of answers referring to different TMs. These are: "*About cold chain*.", "*All of them because now I don't really know what I will be doing in my life, which job I will be doing so all of the whole SLS will be useful*.", "C*ommunication skills*.", "*Stress relieving methods*.", "*The most useful was the TM2*.", "*TM5 soft skill it was very useful*.", and "*Warehouse analysis*."

i. Which knowledge, skills, methods learned during SLS will you share with other colleagues?

This open-ended question was only designed for the participating teachers to identify the knowledge, skills, and methods learned during SLS that they found particularly relevant. Most comments mentioned simulations and simulators as innovative methods of teaching, for example: "*Simulation of land transport software (driving time)*." This strongly underlines the need of introducing experience as close as possible to the real world. Other answers include references to other teaching methods, for example serious games, role plays, case-based learning, etc. One respondent thought that the visit to the Port of Koper was particularly valuable: "*The experience of visiting the Port of Koper*."

j. Which knowledge, skills, methods learned during SLS will you implement into your teaching?

This open-ended question was designed for the participating teachers only. What they are planning to implement into their teaching in the future is KPIs, serious games, simulators and simulations, and case-study learning, which supports their answers to the previous question.

k. Would you recommend SLS to your school friends? Would you recommend SLS to your fellow teachers?

Two separate questions, one for the participating students and one for their teachers, are here presented together.

	Yes	No	I don't know
Teacher	100 %	0 %	0 %
Student	92 %	0 %	8 %

The results indicate that all participating teachers would recommend SLS to their colleagues while among the students eight percent do not know whether they would or would not recommend SLS to their school friends.

The participating teachers highly valued the level of expertise of the trainers, the contacts with fellow teachers from other countries, and the opportunity to acquire or consolidate relevant knowledge and skills, for example: "*Because it is a good opportunity to meet fellow teachers from different European countries, students can exchange experience and knowledge. The topics are relevant to them, and the teachers are top-notch in their respective fields with enough knowledge to motivate even the least motivated students. Also the faculty building is in a beautiful surrounding that I couldn`t have even imagine before coming to Portorož*." Other reasons include the opportunity to use English, meet new people from the same field, and experiment with new teaching methods.

Among the reasons why the students would recommend SLS to their school friends the most frequently mentioned one is the usefulness of the acquired knowledge, for example: "*Because it was a nice experience and you learn lots of new stuff*." The other reasons include meeting new people, communicating with others in English, and satisfaction of being part of the SLS project, for example: "*Because I'm happy to have been part of the project*."

l. What do you think worked particularly well at the SLS?

In the opinion of the participants, the SLS elements that worked particularly well were cooperation among teachers, expert trainers, modern facilities, the use of case studies, board games, simulators and simulations, group work, and interactive activities, and the scheduling. In the words of one of the respondents: "*The overall structure of the modules and their content was very good and worked well. All participants were highly motivated. It was good that we had so many different trainers, this is more interesting and enriching for participants*."

m. What do you think did not work well at the SLS?

Three comments made by the participants on what did not work very well at SLS refer to theory-based direct-instruction lessons: "*I think it`s difficult for students to listen to someone for several hours in English. They prefer to act, like with serious game, case study, using simulator*...", the food at the hostel: "*The food at the hostel was awful*.", and the necessity for creating mixed groups from different countries from the very beginning of SLS: "*We should have put more efforts from the beginning in mixing the groups*."

n. What do you wish there had been more of?

The participants again reiterated their high level of satisfaction with SLS and said they wished there had been more case-based and simulator-based learning, free time to have the opportunity to go sight-seeing: "*I would like having one hour in plus in the morning and one less in the afternoon cause I would like to visit the city of Portorose during the day with the Sun*.", calculation in warehouses, and lectures given by experts from the industry. An aspect mentioned by several participants was intercultural learning, for example: "*Intercultural exercises and some simple language games to learn at least some words in all the 5 languages represented*", and team work in mixed groups.

o. What is your opinion of the visit to the Port of Koper?

The visit to the Port of Koper was highly appreciated by most respondents, as is corroborated by their use of adjectives, such as "*cool and interesting*", "*really really useful*", "*great*", "*insightful*", "*practical*", "*too short*", "*wow, fantastic*", and "*the best of all days*". Two of the more descriptive statements are: "*It was good, we saw a lot of different terminals and transport manipulators*." and "*It was very informative for me since I had never been to any port and also I was impressed with the size and the data our guide presented us with*."

p. Do you have any general suggestions for future improvements to SLS?

The participating students and teachers suggested that each participant should wear a name badge, that a higher number of students should be allowed to attend, and that a longer SLS should be organised, which would enable a more flexible choice of TMs.

For future editions of SLS the trainers gave the following recommendations:

- better connected location: "*Portorose is not so easy to reach with public transportation, so I would suggest a more well-connected place*.",
- reorganised SLS structure: "*To have less modules and to extend those selected. A two-week SLS would be more appropriate from teacher's perspective, but there is doubt if the same is valid for the participants*.", and
- focus on intercultural learning: "*Try to have a bigger room which allows more easily to do some active exercises, games, etc. I think that it is a pity that we don`t benefit from this intercultural*

group to have some exercises about cooperation, intercultural learning, teamwork, etc. I had proposed this during a meeting and was told that this was not professional learning but in my opinion these skills are key in professional life."

q. Are there any further comments that you would like to make?

In their final comments all groups of respondents commended the organisers for the excellent organisation and a positive atmosphere, for example: "*Great organisation, project leader, positive vibrations, interested students*."

4.2 TM evaluation

4.2.1 TM1 – Maritime and Intermodal Management

4.2.1.1 Teaching and learning process

The analysis in the section on the teaching and learning process will rely on qualitative data derived from classroom observations and the interviews with the trainers.

TM1 was divided into four learning units:

- Unit 1: Assessing the main navigation parameters.
- Unit 2: Recognising the main infrastructures and vehicles of maritime ports.
- Unit 3: Coordinating the arrival and departure of freight trains.
- Unit 4: Managing the storage of transport units at the rail-road terminal.

TM1 started on time on Monday morning at 8.30 in the nautical simulator, continued in the afternoon of the same day in classroom no. 205, then on Tuesday morning in the computer room where it finished according to the schedule at 11.40. Four trainers were in charge of this TM.

Environment

The seating arrangement in the nautical simulator can be described as individual work stations situated next to the navigation bridge. In the conventional classroom the students were seated in group pods while in the computer room they each had their individual work station. In all cases the seating arrangement lent very well to the type of activity carried out. The rooms were an appropriate size but in the computer rooms a couple of extra chairs would be welcome because the room was quite crowded and two participating teachers did not have their own computer to work with. The rooms were well-lit and the atmosphere can be described as welcoming and friendly, but because of many people present the computer room could be better ventilated.

People

In the training space there were the participating students and teachers, the designated trainers, the observers, and occasionally the photographer. In the conventional classroom the number of people was just right while in the nautical simulator and computer room there were too many people for the space provided.

Objects

All necessary equipment was provided in all rooms: whiteboard and pens, the trainer's computer, a projector, and an audio system. In the computer room and nautical simulator there were also work stations for the participating students and teachers. What was missing was a PowerPoint clicker that was then readily provided by one of the participants.

Process

In this TM a variety of teaching and learning methods was used: direct instruction, simulations, games, group work, and class discussion. Each seemed to have worked well because they pursued different teaching and learning objectives. For instance, direct instruction was used as an introduction into the topic and worked well to give the participants an insight into the basics of intermodality. In the nautical simulator the participants seemed to have enjoyed experiential learning because they could try various electronic devices on the simulator work stations or steering the ship on the navigation bridge. During the simulations in the computer room the participants looked engaged because the simulations were adjusted to the student participants while the teachers will be able to use them in their teaching. No incidents occurred during this TM nor were there any problems or issues that hindered learning.

All TM units started and finished on time. The trainers stated the objectives of their TM unit at the beginning, and briefly checked the previous knowledge of the participants, once using Mentimeter, in the other cases through class discussion. The professional terminology was mostly dealt with and the participants' comprehension checked. All trainers made eye contact with the participants and stimulated class discussions. When necessary, they provided practical examples and effectively dealt with questions. All points within the four TM units were logically connected and so were the learning units within the TM. All visuals were well designed and served their purpose. The English that the trainers used was correct and clear and appropriate to the level of English of the participants. The atmosphere created by the trainers, experts in their field, was positive and supportive, and the interest of the participants was sustained throughout the TM. Two remarks that might lead to future improvements are that not all trainers summarised the main points of their units at the end and that in one case the trainer had to (successfully) improvise because a computer application (ARPA) was not working as expected.

The participants actively participated in this TM. They did not seem to have any problems understanding English, there was only occasional fiddling with their smartphones and chatting by very few participants. They did not disrupt the TM and sometimes reluctantly but mostly readily answered the trainers' questions. The participants were interested in the TM and seemingly understood what was going on. Two remarks to be made in relation to the participants are that they rarely asked questions when not directly addressed and that most did not actively take notes in the spaces provided next to the visuals in the printed materials. Their interaction with the trainers can be described as collaborative, motivated, and satisfied. At the end of a 90-minute direct instruction session the students seemed quite tired and short breaks could be allowed in the middle of long theoretical sessions. The involved trainers agreed that the participants were engaged, for example: "*Students were very much interested in simulators and raised many questions*."

In terms of scheduling, all trainers would have preferred to have more time for their units, for example: "*I would prefer more time available, however, the objective was achieved*."

4.2.1.2 Learning outcomes

The achievement of the learning outcomes will be evaluated by means of a comparison of the results of two instruments: the pre- and post-tests for the participating students, and the pre- and post-tests

for the participating teachers. The differences in the mean values will indicate the progress made in relation to each learning outcome after the completion of SLS. In both tests the respondents were asked to rate their knowledge or skills related to each indicator on a 5-point Likert-type scale from 5 (I know this very well) to 1 (I don't know this at all).

The results for the participating students will be presented first (Table 2), followed by the results for the participating teachers (Table 3).

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. Do you know the Automatic Radar Plotting Aid (ARPA)?	1.46	0.793	3.79	0.509	+ 2.33
2. Do you know the Electronic Chart Display and Information System (ECDIS)?	1.69	1.004	3.67	0.565	+ 1.98
3. Do you know the main infrastructures and vehicles of maritime ports?	3.21	0.738	4.13	0.741	+ 0.92
4. Do you know the processes of arrival and departure of freight trains (trains and wagons characteristics, terminal types, etc.)?	3.14	0.591	4.13	0.797	+ 0.99
5. Do you know the functioning of intermodal rail-road platforms (main layout, main operations)?	3.11	0.629	4.04	0.624	+ 0.93
6. Do you know the functioning of intermodal rail-road platforms (main layout, main operations)?	3.07	0.716	4.12	0.797	+ 1.05

Table 2: Achievement of the learning outcomes among the participating students

The data shown in Table 2 indicate that the learning outcomes have been achieved. The mean value for all learning outcomes among the students was higher in the post- than in the pre-test. The highest differences can be observed in relation to the two learning outcomes pertaining to maritime navigation (items 1 and 2) where the pre-existing knowledge was lowest.

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. How would you rate your knowledge level about the Automatic Radar Plotting Aid (ARPA)?	1.17	0.577	3.55	0.688	+ 2.38
2. Would you be able to teach lessons about ARPA in your classes?	1.67	0.985	2.91	1.044	+ 1.24

3. How would you rate your knowledge level about the Electronic Chart Display and Information System (ECDIS)?	1.17	0.577	3.36	0.505	+ 2.19
4. Would you be able to teach lessons about ECDIS in your classes?	1.83	1.030	2.91	1.136	+ 1.08
5. How would you rate your knowledge level about the main infrastructures and vehicles of maritime ports?	2.36	1.207	4.00	0.894	+ 1.64
6. Would you be able to teach lessons about the main infrastructures and vehicles of maritime ports?	2.64	1.027	3.55	0.820	+ 0.91
7. How would you rate your knowledge level about the coordination of the arrival and departure of freight trains?	1.82	0.751	3.82	0.603	+ 2.00
8. Would you be able to teach lessons about the coordination of the arrival and departure of freight trains?	2.18	0.874	3.45	0.820	+ 1.27
9. How would you rate your knowledge level about intermodal rail-road platforms?	1.91	0.944	3.64	0.505	+ 1.73
10. Would you be able to teach lessons about intermodal rail-road platforms?	2.36	1.027	3.45	0.820	+ 1.09

Table 3 : Achievement of the learning outcomes among the participating teachers

Like the data for the participating students, the data for the participating teachers presented in Table 3 show that the learning outcomes have been reached. In fact, the mean values of all indicators of the pre-test are lower than the mean values of the related items of the post-test. Interestingly, the teachers seem to have been more critical than their students when self-assessing their own knowledge and skills before the beginning of SLS. In fact, some mean values among the teachers are lower than the mean values among their students (e.g. 3. Do you know the main infrastructures and vehicles of maritime ports? – 3.21 among the students and 1.17 among the teachers).

The classroom observations corroborated that the trainers pursued the learning outcomes as defined in the TM1 objectives and lesson plans. When asked to describe the main outcomes of this TM, the following descriptions were provided by the observers: "*Know the systems used on ships, know the difference between the presented systems, know the purpose of the systems*.", "*Knowledge of the port terminals, vehicles, and inbound and outbound port processes*.", "*An introduction into intermodality and intermodal transport units*.", and "*Participants learned about intermodal terminals, activities at the arrival and departure of trains at the terminal*."

The trainers of each TM were asked to comment on whether they thought that their training unit met the participants' needs and which topics would need to be added to this TM, if any. For TM1 the involved trainers agreed that TM1 met the participants' needs, for example: "*The goals were to provide theoretical basis for the next lessons on maritime/intermodal transport. Participants obtained good*

basis for further development of specific knowledge and competences." The trainers did not have any further suggestions on topics to add to TM1.

4.2.1.3 Participants' satisfaction level

The participants' satisfaction level with TM1 will be evaluated by means of the analysis of quantitative and qualitative data derived from the participants' survey. The results for the participating students (Table 4) and teachers (Table 5) will be presented separately in order to ascertain the level of satisfaction within each of these two groups of SLS participants. The respondents were asked to rate their level of satisfaction on a 5-point Likert-type scale from 5 (I strongly agree) to 1 (I strongly disagree).

	Students		Teachers	
Indicator	Mean	Std. dev.	Mean	Std. dev.
1. The expectations that I had for TM1 were met.	4.29	0.611	4.20	0.789
2. I found the teaching methods used in TM1 effective.	4.29	0.469	3.50	1.080
3. The time dedicated to each topic in TM1 was adequate.	4.07	0.616	3.80	0.632
4. The facilities (laboratories, computers, classrooms etc.) were appropriate for TM1.	4.00	0.816	4.46	0.519
5. I could easily understand the English used by the trainer of TM1.	4.43	0.514	3.90	0.738
6. The trainer of TM1 welcomed questions and answered them appropriately.	4.43	0.646	4.10	0.738
7. The professional terminology of TM1 was clearly presented.	4.29	0.469	4.00	0.667
8. I could easily understand the presented topics during TM1.	4.21	0.426	4.00	0.667
9. The trainer knew the subject well.	4.71	0.469	4.30	0.823
10. The trainer gave clear explanation on each topic.	4.62	0.506	4.10	0.738
11. The speed of the trainer was adequate.	4.43	0.514	3.90	0.568

Table 4 : Participant satisfaction level with TM1

The data presented in Table 4 show high satisfaction levels with different aspects of TM1 among both groups of respondents. The mean values among the student respondents never fall beneath the value of 4 while the teachers were slightly more critical. In fact, we can see that the following indicators have values lower than 4, which can be interpreted as slight but not determined agreement: 2. I found the teaching methods used in TM1 effective., 3. The time dedicated to each topic in TM1 was adequate.,

5. I could easily understand the English used by the trainer of TM1., and 11. The speed of the trainer was adequate.

When asked what they particularly liked about TM1, several teachers mentioned simulators and simulations, and serious games, for example: "*The simulation of the intermodal railway station*." Their students seem to agree as many of them particularly liked simulators. In addition to these, practical work and the integrated navigation system simulator were mentioned.

On the other hand, TM1 elements that several teachers did not like very much were theoretical direct-instruction classes, for example: "*When the teacher explains for 90 minutes in a row*." The students seemed to like everything with the exception of one respondent that would dedicate more time to this TM.

The final question about each TM asked the respondents to provide any additional comments. One teacher thought that "*Unit 2 needed more time to be presented*." while another mentioned: "*Not enough time to speak about incoterms*". Only one student respondent commented on this question, praising the boat trip: "*Fantastic exit with the boat*."

4.2.2 TM2 – Supply Chain Management of Cold Products

4.2.2.1 Teaching and learning process

The analysis in the section on the teaching and learning process will rely on qualitative data derived from classroom observations and the interviews with the trainers.

TM2 was divided into four learning units:

- Unit 1: Understanding the basics of supply chains.
- Unit 2: Organising a supply chain of cold products.
- Unit 3: Cold chain warehousing.
- Unit 4: Understanding the main aspects of transporting cold products.

TM2 started on Thursday at 8.30 and finished on the same day at 17.10. The entire module was conducted in a conventional classroom.

Environment

The seating arrangement in the classroom provides group pods. It lent well to the activities carried out in this TM. The classroom was described and friendly, welcoming, and warm. The number of participants in the classroom was just right, there were neither too many nor too few.

People

The people present in the room were the trainer, the student and teacher participants, and the observer.

Objects

The room was provided with the necessary equipment: whiteboard and pens, the trainer's computer, a projector, the PowerPoint clicker, and audio system. Other equipment items provided were the board games.

Process

Different working methods were used in this TM: direct instruction, games, group work, pair work, and class discussion. What worked particularly well were the smart games because, in the words of the observer, "*the students enjoyed them, the learned while playing*". No incidents occurred during this TM nor were there any problems that hindered learning.

All TM units started and finished on time. The trainer, an expert in the topic of the TM and from the industry, started the TMU on time and finished on time. He stated the objectives of the TMU at the beginning of the TMU, and summarised the main points at the end of the TMU, which worked particularly well. The professional terminology was well explained, and the participants' comprehension occasionally checked. The trainer stimulated critical and autonomous thinking as well as class discussion, and made eye contact with the participants. Practical examples were used to illustrate theoretical points, clear instructions were provided, and different teaching methods were used. The trainer effectively used ICT equipment and questions. The points within this TM were logically connected. The visuals were well designed. The trainer gave encouraging feedback, and used clear and correct English at a level appropriate to the participants. The atmosphere that the trainer created was positive and supportive, and he was able to sustain the interest of the participants throughout the TM.

The observers described the participants in this TM as collaborative, open, satisfied, and motivated but also "*too shy to ask what they don't know*". Otherwise, they actively participated in the TM, readily answered the trainer's questions, showed interest, did not chat when no allowed, and knew what was going on. However, some fiddling with their smartphones was observed. In addition, the participants did not seem to actively be taking notes.

In terms of scheduling, one of the observers noted that "*the time allocated for the training was ok, with possibilities to re-explain with examples if somebody was not clear*."

4.2.2.2 Learning outcomes

The achievement of the learning outcomes will be evaluated by means of a comparison of the results of two instruments: the pre- and post-tests for the participating students, and the pre- and post-tests for the participating teachers. The differences in the mean values will indicate the progress made in relation to each learning outcome after the completion of SLS. In both tests the respondents were asked to rate their knowledge or skills related to each item on a 5-point Likert-type scale from 5 (I know this very well) to 1 (I don't know this at all).

The pre-test sections relevant to this TM were completed by 12 students and 3 teachers. On the other hand, the post-test sections relevant to this TM were completed by 12 students and 5 teachers.

The results for the participating students will be presented first (Table 5), followed by the results for the participating teachers (Table 6).

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. Do you know what a supply chain is?	4.17	0.937	4.45	0.522	+ 0.28

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
2. Do you know the aims of a supply chain?	3.75	0.866	4.40	0.699	+ 0.65
3. Do you know the actors/partners of a supply chain?	4.17	0.718	4.82	0.405	+ 0.65
4. Do you know the risks of a supply chain?	3.50	0.905	4.40	0.699	+ 0.90
5. Do you know how to handle the transport of cold products?	3.08	0.996	4.09	0.831	+ 1.01
6. Do you know what specific regulations and aspects you must take into account for the transport of cold products?	2.83	0.937	4.00	0.775	+ 1.17
7. Do you know which specific measures you must apply for the transport of cold products?	3.00	1.128	4.00	1.000	+ 1.00
8. Do you know how to operate in a cold chain warehouse?	2.58	0.900	3.91	1.044	+ 1.33

Table 5: Achievement of the learning outcomes among the participating students

Before SLS the knowledge of the participating students of some elements of supply chain management and cold products was better than of others. For instance, some already had a solid knowledge of the concepts of supply chain and involved actors. On the other hand, their level of knowledge of specific regulations and aspects to take into account when transporting cold products and of the operation of a cold chain warehouse was much lower. After the end of SLS, the mean values of all indicators consistently increased, most notably so with reference to the indicators that hinted at points of insufficient knowledge. Therefore, we can say that all learning outcomes as defined by the curriculum for TM2 were successfully reached.

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. How would you rate your knowledge level about the difference of supply chain and logistics chain?	3.67	1.528	3.40	0.894	- 0.27
2. Would you be able to teach lessons on the difference of supply chain and logistics chain?	3.33	1.528	3.00	0.894	- 0.33

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
3. How would you rate your knowledge about the supply chain partners?	4.33	1.155	3.40	0.894	- 0.93
4. Would you be able to teach lessons on supply chain partners?	3.33	1.528	3.00	1.225	- 0.33
5. How would you rate your knowledge about supply chain risks?	4.33	1.155	3.40	0.894	- 0.93
6. Would you be able to teach lessons about the supply chain risks in your classes	3.33	1.528	3.00	1.225	- 0.33
7. How would you rate your knowledge level about the transport of cold products?	4.00	1.732	3.40	0.894	- 0.60
8. Would you be able to teach lessons about the transport of cold products in your classes?	3.33	1.528	3.00	1.225	- 0.33
9. How would you rate your knowledge level about operations in a cold chain warehouse?	4.33	1.155	3.40	0.894	- 0.93
10. Would you be able to teach lessons about operating in a cold chain warehouse in your classes?	3.67	1.155	3.00	1.225	- 0.67

Table 6 : Achievement of the learning outcomes among the participating teachers

The situation among the participating teachers was different from that of their students. Before SLS they knew well the roles of the different agents in the supply chain, the supply chain risks, the transport of cold products, and the operations in a cold chain warehouse. After SLS the mean values of all indicators fell. The reasons for this might be identified in the previously unrecognised complexity of cold supply chains which, however, would have to be confirmed by follow-up interviews with the participating teachers.

The classroom observers described the main outcome of this TM as the "*understanding of how to work in a cold supply chain*", which is in line with the TM objective and lesson plans. As a possible improvement to this TM they mentioned "*more practical work and a visit to a cold chain company*."

The trainers in each TM were asked to comment on whether they thought that their training unit met the participants' needs and which topics would need to be added to this TM, if any. The only comment made was that they were able to provide "*basic, important information on the matter*."

4.2.2.3 Participants' satisfaction level

The participants' satisfaction level with TM2 will be evaluated by means of the analysis of quantitative and qualitative data derived from the participants' survey. The results for the participating students (Table 7) and teachers (Table 8) will be presented separately in order to ascertain the level of satisfaction within each of these two groups of SLS participants. The respondents were asked to rate their level of satisfaction on a 5-point Likert-type scale from 5 (I strongly agree) to 1 (I strongly disagree) (see Table 7).

	Students		Teachers	
Indicator	Mean	Std. dev.	Mean	Std. dev.
1. The expectations that I had for TM2 were met.	4.20	0.837	3.67	0.577
2. I found the teaching methods used in TM2 effective.	3.75	1.258	3.67	0.577
3. The time dedicated to each topic in TM2 was adequate.	4.40	0.548	3.67	0.577
4. The facilities (laboratories, computers, classrooms etc.) were appropriate for TM2.	4.60	0.548	3.67	0.577
5. I could easily understand the English used by the trainer of TM2.	4.60	0.548	3.67	0.577
6. The trainer of TM2 welcomed questions and answered them appropriately.	4.60	0.548	3.67	0.577
7. The professional terminology of TM2 was clearly presented.	4.40	0.548	3.67	0.577
8. I could easily understand the presented topics during TM2.	4.40	0.548	3.67	0.577
9. The trainer knew the subject well.	4.20	0.837	3.67	0.577
10. The trainer gave clear explanation on each topic.	4.40	0.548	3.67	0.577
11. The speed of the trainer was adequate.	4.40	0.548	3.67	0.577

Table 7 : Participant satisfaction level with TM1

In terms of the level of satisfaction of the participants with TM2 we could say that the participating students were highly satisfied with all elements of this TM while their teachers were slightly more critical. The mean values of the indicators among the students mostly exceed the value of 4, the mean values of all indicators among the participating teachers are lower than 4.

When asked to describe what they really liked about TM2, the participants stated "*the case studies and play*" and the trainer that was "*very knowledgeable*".

For future improvements to this TM the participants would only suggest "*a more interactive class*".

4.2.3 TM3 – Warehouse Analysis

4.2.3.1 Teaching and learning process

The analysis in the section on the teaching and learning process will rely on qualitative data derived from classroom observations and interviews with the trainers.

TM3 was divided into four learning units:

- Unit 1: Calculating and assessing the KPIs of a logistics warehouse.
- Unit 2: Proper use of a Warehouse Management System.
- Unit 3: Preparing an order.
- Unit 4: Using methods/techniques for the optimisation of warehouse operations.

TM3 started on Thursday at 8.30 and finished on the same day at 17.10. The entire module was conducted in a conventional classroom.

Environment

The seating arrangement is the conventional classroom in which TM3 took place can be described as group pods. Given the adopted teaching methodology (direct instruction and case studies), the classroom was appropriate for this TM because it has movable chairs and desks that can be rearranged if necessary. The atmosphere in the room was welcoming, friendly, and warm, and the classroom was described as modern.

People

In the classroom there were the participating students and teachers, the designated trainers, the observers, and occasionally the photographer. The number of people in the classroom was just right.

Objects

The necessary equipment was available in the room: whiteboard and pens, the trainer's computer, a projector, and an audio system. No other specific equipment was required.

Process

In this TM direct instruction and cases studies were used. In the opinion of the observers, "*Both methods suit the purpose fine since it was an absolutely new subject for the students*." and "*Experimental learning seemed to work very well, since it was supported by video clips*." No incidents occurred during this TM nor were there any problems or issues that hindered learning.

All TM units started and finished on time. The trainers stated the objectives of their TM unit at the beginning and checked the previous knowledge of the participants. The professional terminology was explained and the participants' comprehension checked. The trainers stimulated critical and autonomous thinking and made eye contact with the participants. Based on the case studies, they used practical examples to illustrate the theoretical points. The instructions that they provided were clear and ICT equipment was efficiently used. If the participants asked questions, these were efficiently dealt with. The points within this TM unit were logically connected. The visuals were well designed. When feedback was given, it was encouraging. The English that the trainers used was clear, correct, and appropriate for the participants. The atmosphere that the expert trainers created in the classroom was supportive and positive, and they were able to sustain the interest of the participants throughout the

TM. Three possible points for improvement are summarising the main points of the unit at its completion, more actively stimulating class discussion, and using additional teaching methods besides direct instruction and case studies.

The participants actively participated in this TM. They did not seem to have any problems with understanding English, did not fiddle with their smartphones, nor disrupted the TM in any way. In addition, the participants were interested in the TM and seemed to understand what was going on. There was no need for them to use ICT equipment. Possible points for improvement indicate that the participants did not ask many questions and most did not actively take notes.

In terms of scheduling, the trainers agreed that the allotted time was sufficient for the task: "*They would be tired if the class was prolonged*."

4.2.3.2 Learning outcomes

The achievement of the learning outcomes will be evaluated by means of a comparison of the results of two instruments: the pre- and post-tests for the participating students, and the pre- and post-tests for the participating teachers. The differences in the mean values will indicate the progress made in relation to each learning outcome after the completion of SLS. In both tests the respondents were asked to rate their knowledge or skills related to each item on a 5-point Likert-type scale from 5 (I know this very well) to 1 (I don't know this at all).

The pre-test sections relevant to this TM were completed by 9 students and 3 teachers. On the other hand, the post-test sections relevant to this TM were completed by 8 students and 4 teachers.

The results for the participating students will be presented first (Table 8), followed by the results for the participating teachers (Table 9).

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. Do you know how to calculate KPIs of a Logistics Warehouse?	2.33	1.500	3.50	0.756	+ 1.17
2. Do you know how to assess KPIs of a Logistics Warehouse?	2.44	1.424	3.50	0.926	+ 1.06
3. Do you know what a Warehouse Management System (WMS) is	2.22	0.972	3.87	0.641	+ 1.65
4. Do you know the basic architecture of a WMS?	1.56	0.726	3.50	0.756	+ 1.94
5. Do you know how to prepare an order in a warehouse?	4.11	0.601	4.13	0.641	+ 0.02
6. Do you know warehouse documentation and warehouse procedures?	3.78	0.667	3.88	0.354	+ 0.10
7. Do you know methods and/or techniques to optimise warehouse operations?	3.22	0.833	4.00	0.756	+ 0.78

Table 8: Achievement of the learning outcomes among the participating students

The data presented in Table 7 first indicate that before SLS the participating students had a very dispersed knowledge of warehousing. While they seemed to know well how to prepare an order and were familiar with warehouse documentation and procedures, their knowledge of the KPIs of a logistics warehouse, the Warehouse Management System, and the basic architecture of a warehouse was lacking. After the completion of SLS, the mean values of all indicators increased, most significantly for the items where their knowledge before SLS had been insufficient.

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. How would you rate your knowledge level about calculating KPIs for a logistics warehouse?	3.67	0.577	3.50	1.000	- 0.17
2. How would you rate your knowledge level about assessing KPIs for a logistics warehouse?	4.00	1.000	3.25	1.500	- 0.75
3. Would you be able to teach lessons about calculating and assessing KPIs for a logistics warehouse?	4.67	0.577	3.25	0.957	- 1.42
4. How would you rate your knowledge level about Warehouse Management Systems (WMS)?	4.00	1.000	2.75	1.258	- 1.25
5. Would you be able to use a real or pedagogical WMS (e.g. simulator) during your classes?	4.33	1.155	3.25	0.500	- 1.08
6. How would you rate your knowledge level about warehouse documentation and warehouse procedures?	2.33	0.577	4.25	0.500	+ 1.92
7. Would you be able to teach lessons about warehouse documentation and warehouse procedures?	3.00	1.732	4.25	0.500	+ 1.25
8. How would you rate your knowledge level about methods and/or techniques to optimise warehouse operations?	3.67	0.577	4.00	0.000	+ 0.33
9. Would you be able to teach lessons about methods and/or techniques to optimise warehouse operations?	4.33	1.155	3.75	0.500	- 0.58

Table 9 : Achievement of the learning outcomes among the participating teachers

On the other hand, the analysis of the data provided by the participating teachers provides a different perspective. Before the SLS their knowledge of the KPIs, the Warehouse Management System, and methods and techniques for the optimisation of warehouses was solid. The only category in which their knowledge, in their own opinion, was lacking seems to have been warehouse documentation and warehouse procedures. At the same time these two elements recorded the highest increase in the mean values of the post-test taken after SLS. The mean values of the other indicators decreased. This might be attributed to the solid pre-existing knowledge of these elements among the teachers or the increased awareness of the complexity of these topics.

The classroom observers described the main outcomes of this TM with the following words: "*Basic KPIs described and calculation method of different KPIs presented*.", "*Excellent presentation of integrated WMS: pick by voice, pick by light, fully automated WHS*.", and "*Understanding warehouse complexity*." This corroborates that the teaching content was in line with the teaching objectives and outcomes as stated in the SLS curriculum and lesson plans.

The trainers in each TM were asked to comment on whether they thought that their training unit met the participants' needs and which topics would need to be added to this TM, if any. The trainers thought that TM3 met the participants' needs. One suggestion put forward by the trainers is that the teaching and learning process should actually take place in a warehouse: "*Go to a real warehouse and teach there.*"

4.2.3.3 Participants' satisfaction level

The participants' satisfaction level with TM3 was evaluated by means of the analysis of quantitative and qualitative data derived from the participants' survey. The results for the participating students (Table 10) and teachers (Table 11) will be presented in this section separately in order to ascertain the level of satisfaction within each of these two groups of SLS participants. The respondents were asked to rate their level of satisfaction on a 5-point Likert-type scale from 5 (I strongly agree) to 1 (I strongly disagree).

	Students		Teachers	
Indicator	Mean	Std. dev.	Mean	Std. dev.
1. The expectations that I had for TM3 were met.	4.40	0.548	4.25	0.957
2. I found the teaching methods used in TM3 effective.	4.00	0.707	4.00	0.816
3. The time dedicated to each topic in TM3 was adequate.	4.20	0.447	4.25	0.957
4. The facilities (laboratories, computers, classrooms etc.) were appropriate for TM3.	4.00	0.707	4.25	0.957
5. I could easily understand the English used by the trainer of TM3.	4.40	0.548	4.25	0.957
6. The trainer of TM3 welcomed questions and answered them appropriately.	4.20	0.447	4.75	0.500

	Students		Teachers	
Indicator	Mean	Std. dev.	Mean	Std. dev.
7. The professional terminology of TM3 was clearly presented.	4.40	0.548	4.50	0.577
8. I could easily understand the presented topics during TM3.	4.40	0.548	4.50	0.577
9. The trainer knew the subject well.	4.60	0.548	4.75	0.500
10. The trainer gave clear explanation on each topic.	4.40	0.548	4.75	0.500
11. The speed of the trainer was adequate.	4.40	0.548	4.25	0.500

Table 10 : Participant satisfaction level with TM3

The data presented in Table 10 show that the participating teachers and students were highly satisfied with TM3. In fact, the mean value is not lower than 4 for any indicator.

The elements of TM3 that the participants particularly liked were the two lecturers and the use of experience-based authentic examples, for instance: "*Both teachers were very good, they had a great knowledge of the subject*.", and "*I really liked the professors and their way of talking and showing us things*."

On the other hand, some participants missed the use of different examples instead of placing the focus on a single case study: "*I missed practical examples. It could be enough just one more example*."

The final question about each TM asked the respondents to supply any additional comments. Only one comment was provided, suggesting to dedicate more time to this TM: "*It could be longer in duration because it was interesting*."

4.2.4 TM4 – Transport Organisation

4.2.4.1 Teaching and learning process

The analysis in the section on the teaching and learning process will rely on qualitative data derived from classroom observations and the interviews with the trainers.

TM4 was divided into five learning units:

- Unit 1: Calculating the costs of a transport mission.
- Unit 2: Preparing a transport mission.
- Unit 3: Assessing the feasibility of a transport mission.
- Unit 4: Monitoring a transport mission.
- Unit 5: Assessing the KPIs of a transport mission.

TM4 started on Tuesday in the afternoon at 14.00 in a conventional classroom. It continued on Wednesday in the morning in the same classroom. On Wednesday afternoon the participants were divided into two groups, alternating between a conventional classroom and a computer room. The module finished on time on Wednesday afternoon at 17.10.

Environment

In the conventional classroom the students were seated in group pods while in the computer room they each had their individual work station. In all cases the seating arrangement was appropriate to the type of activity carried out. However, one of the observers commented that "*Preparation of tables for group work could be done before the exercise*." The rooms were welcoming and well-lit and the atmosphere was friendly.

People

In the training space there were the participating students and teachers, the designated trainers, the observers, and occasionally the photographer. One observer noted that there were too many people in the computer room. Otherwise the number of people in the rooms was just right.

Objects

All necessary equipment was provided in all rooms: whiteboard and pens, the trainer's computer, a projector, and an audio system. In the computer room there were individual work stations for the participating students and teachers. Computers were also available for group work.

Process

In this TM different teaching methods were used: direct instruction, case studies, experiential learning, simulations, games, task-based learning, group work, pair work, and class discussion. What worked particularly well, in the words of the observers, was: "*Short introduction of direct instructions, the remaining part was group-work, that engaged the participants*." and "*Pair-work in the Simultra game and group-work in the case study where participants had to discuss and reach a joint decision*." Therefore, all teaching methods were in line with the learning outcomes. No incidents occurred during this TM nor were there any problems or issues that hindered learning.

The TM units started and finished on time. The learning objectives were clearly presented at the beginning of each unit and summarised at the end. The participants' comprehension was occasionally checked. The trainers stimulated critical and autonomous thinking and made eye contact with the participants. They also stimulated class discussion, used practical examples, provided clear instructions, and relied on different teaching methods. In addition, the trainers effectively used ICT equipment, dealt with questions, and logically connected the points within each TM unit. The visuals were well designed, the feedback was encouraging, and the English used by the trainers was clear, correct and appropriate to the audience. The atmosphere created by the trainers was supportive and positive. The trainers are experts in the topic of TM4, and managed to sustain the interest of the participants throughout this TM. Room for improvement can be found in relation to two indicators: checking the previous knowledge of the participants, and explaining the professional terminology.

The participants actively collaborated in the TM, but did not ask many questions. They did not seem to have any problems understanding English, did not fiddle with their smartphones, nor disrupted the TM in any way. On the other hand, most did not actively take notes nor readily answered the trainers' questions. Their use of ICT equipment was smooth. They were interested in the TM and understood what was going on. The observers described them as collaborative and motivated but shy.

When asked about the timing, one of the trainers stated: "*The time for my training units was adequate but in general more breaks would have been better for the participants. The days are very intensive for them*."

4.2.4.2 Learning outcomes

In this section, the achievement of the learning outcomes will be evaluated by means of a comparison of the results of two instruments: the pre- and post-tests for the participating students, and the pre- and post-tests for the participating teachers. The differences in the mean values will indicate the progress made in relation to each learning outcome after the completion of SLS. In both tests the respondents were asked to rate their knowledge or skills related to each item on a 5-point Likert-type scale from 5 (I know this very well) to 1 (I don't know this at all).

The results for the participating students will be presented first (Table 11), followed by the results for the participating teachers (Table 12).

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. Do you know how to treat a transport demand?	3.07	0.874	4.17	0.565	+ 1.10
2. Do you know how to analyse customer's demand for a transport mission?	2.79	0.917	4.33	0.482	+ 1.54
3. Do you know the KPIs for a transport mission and how to decide if a transport mission is feasible?	2.07	1.052	3.79	0.779	+ 1.72
4. Do you know how to prepare and implement a transport mission	2.78	0.934	4.00	0.659	+ 1.22
5. Do you know how to monitor a transport mission	3.00	0.832	4.00	0.674	+ 1.00
6. Do you know how to fill a CMR (bill of lading)?	3.31	1.285	4.46	0.721	+ 1.15
7. Do you know what a Transport Management System (TMS) is	2.93	1.207	3.92	0.830	+ 0.99

Table 11: Achievement of the learning outcomes among the participating students

Before the beginning of SLS the participating students did not have solid pre-existing knowledge on the topics of TM3, as the mean values of the pre-test indicators show. After the completion of SLS the mean values significantly and consistently increased for all indicators, which corroborates the alignment between teaching content and methodology on one hand and learning outcomes as stated in the curriculum on the other.

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. How would you rate your knowledge level about the analysis of a customer's	3.73	1.191	3.64	0.505	- 0.09

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
demand for a road freight transport operation?					
2. Would you be able to teach lessons about the analysis of a customer's demand for a road freight transport operation?	3.36	1.027	3.27	0.786	- 0.09
3. How would you rate your knowledge level about studying the feasibility of a road freight transport operation?	3.73	1.104	3.64	0.505	- 0.09
4. Would you be able to teach lessons about the feasibility of a road freight transport operation?	3.27	1.009	3.36	0.809	+ 0.09
5. How would you rate your knowledge level about the implementation of a transport mission	3.73	1.272	3.73	0.647	0.00
6. Would you be able to teach lessons about road freight transport operations (preparation, implementation, monitoring, etc.) in your classes?	3.27	1.104	3.55	0.934	+ 0.28
7. How would you rate your knowledge level about Transport Management Systems (TMS)?	3.64	1.286	3.64	0.505	0.00
8. Would you be able to use a real or pedagogical TMS (e.g. simulator) during your classes?	3.55	1.128	3.55	0.820	0.00

Table 12 : Achievement of the learning outcomes among the participating teachers

However, the participating teachers did not seem to have made significant progress in their knowledge and skills related to TM4 topics. Before SLS their knowledge and skills levels were relatively high, most mean values being close to 4, but there was significant room for improvement that, however, the content of this TM does not seem to have catered for. In fact, the pre- and post-test mean values are only slightly higher or lower for all indicators.

As the main learning outcomes of this TM the observers stated the ability to organise a transport mission and hands-on experience with transport organisation or, in other words, "*increased knowledge in transport organisation and upgraded competences in operational work*." These observations corroborate that TM4 was consistent with the training objectives and outcomes as stated in the curriculum and lesson plans.

The trainers in each TM were asked to comment on whether they thought that their training unit met the participants' needs and which topics would need to be added to this TM, if any. The provided

answers indicate that the trainers think that the participants' needs were met, for example: "*I have the impression that yes but this question would have to be asked to the teachers or students themselves*." The trainers involved in TM4 do not have any suggestions for additional topics to be included into their TM.

4.2.4.3 Participants' satisfaction level

The participants' satisfaction level with TM4 will be evaluated by means of the analysis of quantitative and qualitative data derived from the participants' survey. The results for the participating students (Table 13) and teachers (Table 14) will be presented separately in order to ascertain the level of satisfaction within each of these two groups of SLS participants. The respondents were asked to rate their level of satisfaction on a 5-point Likert-type scale from 5 (I strongly agree) to 1 (I strongly disagree).

	Students		Teachers	
Indicator	Mean	Std. dev.	Mean	Std. dev.
1. The expectations that I had for TM4 were met.	4.14	0.770	4.13	0.641
2. I found the teaching methods used in TM4 effective.	4.29	0.611	4.00	0.756
3. The time dedicated to each topic in TM4 was adequate.	4.14	0.363	4.00	0.535
4. The facilities (laboratories, computers, classrooms etc.) were appropriate for TM4.	4.07	0.475	4.25	0.707
5. I could easily understand the English used by the trainer of TM4.	4.31	0.855	4.25	0.707
6. The trainer of TM4 welcomed questions and answered them appropriately.	4.36	0.842	4.13	0.641
7. The professional terminology of TM4 was clearly presented.	4.36	0.633	4.25	0.707
8. I could easily understand the presented topics during TM4.	4.29	0.611	4.25	0.707
9. The trainer knew the subject well.	4.29	0.611	3.88	0.641
10. The trainer gave clear explanation on each topic.	4.29	0.611	4.00	0.535
11. The speed of the trainer was adequate.	4.14	0.535	4.25	0.707

Table 13 : Participant satisfaction level with TM4

The mean values for the indicators that aimed to evaluate the participants' satisfaction level with SLS as presented in Table 13 show that both the participating students and teachers were highly satisfied with different SLS elements. The only mean value that is lower than 4 indicates that the participating teachers were slightly less satisfied with the knowledge of the subject by the trainers.

When asked what they particularly liked about TM4, the participants mentioned the board game, group exercises, using the simulator, Mentimeter, the case study, the simulation of land transport, and the trainers' lessons in general.

Among the suggested improvements or the points that the participating students and/or teachers liked less than others they mentioned too theoretical and too long units, insufficient time, and the fast speaking pace of the trainer.

Another suggested improvement found among the final comments in the questionnaire was: "*Longer TM module, in order to repeat examples*."

4.2.5 TM5 – Key Soft Skills

4.2.5.1 Teaching and learning process

The analysis in the section on the teaching and learning process will rely on qualitative data derived from classroom observations and interviews with the trainers.

TM5 was divided into three learning units:

- Unit 1: Managing stress.
- Unit 2: Time management and prioritising.
- Unit 3: Managing changes.

TM5 started on Thursday at 8.30 and finished on the same day at 17.10. The entire module was conducted in a conventional classroom with movable chairs and desks.

Environment

The room could be used in a very flexible way (change of seating arrangements, etc.) and, in the words of one of the observers, "*perfectly suited this TM.*" It can be described as friendly, welcoming, and well-ventilated.

People

In the training space there were the participating students and teachers, the designated trainers, the observers, and occasionally the photographer. The number of people in the room was just right.

Objects

All necessary equipment was provided in the room: whiteboard and pens, the trainer's computer, a projector, and an audio system. No other equipment was necessary.

Process

TM5 relied on the use of limited direct instruction, class discussion, brainwriting, pair work, group work, and a motivational video. When asked which methods worked particularly well, the observers noted that: "*The pair work and the individual work worked best during this TMU because these methods involve the participants in an active way. Even those that were tired participated actively here*." and "*All methods worked well but especially the class discussion when the trainer asked the participants about concrete examples of stress and stressful situations and the symptoms this can have. Participants participated very actively. The same for the practical exercises*." Therefore, the teaching methods were in line with the learning outcomes. No incidents occurred during this TM nor were there any problems or issues that hindered learning.

The classroom observations report that the trainer started and finished TM5 on time. However, the objectives of the TM units and the lesson plan were not consistently presented at the beginning nor summarised at the end. Another possible point for improvement is checking the participants' previous knowledge at the beginning of the TM. On the other hand, the trainer explained the English terminology and occasionally checked the participants' comprehension. She stimulated critical and autonomous thinking, made eye contact with the participants, stimulated class discussion, and used practical examples. In addition, the instructions were clear, and as stated above, different and appropriate teaching methods were used. The trainer effectively used ICT equipment and dealt with questions, providing encouraging feedback when necessary. The points within the TM were logically connected. The visuals were well designed and correct. The English that the trainer used was clear and correct, and at a level appropriate to the participants. The atmosphere that the trainer created was positive and supportive. The trainer is an expert in the field of TM5 and was able to sustain the interest of the participants throughout the TM. One of the observers added: "*The trainer made direct contact with participants and used a very practical approach, comprehensive vocabulary and examples everybody can understand. She successfully encouraged all participants to speak and participate actively. As for the TMU of this morning, very good mix of methods, clear and easy understandable explanations, warm & friendly behaviour and way of teaching. Adaptation to the participants' needs with an additional break during TMU. The trainer named some personal examples which made it easier for participants to speak about own stressful situations*. "

The participants were described by the observers as motivated, open, and satisfied. They actively participated in the TM, also asking questions. They did not seem to have problems with understanding English, did not fiddle with their smartphones nor disrupted the TM in any way. Most participants did not actively take notes. They readily answered the trainer's questions, showed interest in the TM, and understood what was going on. In the words of one of the observers: "*They were very interested and surprisingly open to speak about personal situations of stress. They participated actively in all the exercises*."

According to the trainer, the time for the TM was sufficient but she might have "*misjudged the time needed for specific tasks*".

4.2.5.2 Learning outcomes

The achievement of the learning outcomes will be evaluated by means of a comparison of the results of two instruments: the pre- and post-tests for the participating students, and the pre- and post-tests for the participating teachers. The differences in the mean values will indicate the progress made in relation to each learning outcome after the completion of SLS. In both tests the respondents were asked to rate their knowledge or skills related to each item on a 5-point Likert-type scale from 5 (I know this very well) to 1 (I don't know this at all).

The pre-test sections relevant to this TM were completed by 7 students and 3 teachers. On the other hand, the post-test sections relevant to this TM were completed by 5 students and 2 teachers.

The results for the participating students will be presented first (Table 14), followed by the results for the participating teachers (Table 15).

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. Do you know the causes and consequences of stress?	3.86	0.378	4.80	0.447	+ 0.94

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
2. Do you know how to cope with stress?	3.14	0.900	4.80	0.447	+ 1.66
3. Do you know how to prioritise your missions and activities?	3.57	0.787	4.40	0.548	+ 0.83
4. Do you know how to manage your time efficiently?	3.71	0.756	4.80	0.447	+ 1.09
5. Do you know what change management is?	2.43	0.976	4.20	0.837	+ 1.77
6. Do you know how to develop and improve your collaboration skills?	2.86	0.690	4.40	0.548	+ 1.54

Table 14: Achievement of the learning outcomes among the participating students

The mean values of the indicators in Table 14 reveal that before attending SLS the participating students were quite familiar with some TM5 topics, for example the causes and consequences of stress, but less with others, for example change management and ways to develop and improve one's collaboration skills. After the end of SLS, the mean values of all indicators significantly increased, which corroborates the achievement of the training objectives and learning outcomes as stated by the SLS curriculum.

Learning outcome	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. How would you rate your knowledge level about the causes and consequences of stress?	3.00	1.732	4.50	0.707	+ 1.50
2. Would you be able to teach lessons about the causes and consequences of stress?	3.67	1.528	4.00	0.000	+ 0.33
3. How would you rate your knowledge level about techniques and methods to cope with stress?	3.67	1.155	4.50	0.707	+ 0.33
4. Would you be able to teach lessons about techniques and methods to cope with stress	3.67	1.155	4.00	0.000	+ 0.33
5. How would you rate your knowledge level about techniques and methods to prioritise missions and activities?	3.67	1.155	4.00	0.000	+ 0.33

6. Would you be able to teach lessons about techniques and methods to prioritise missions and activities?	3.67	1.155	4.00	0.000	+ 0.33
7. How would you rate your knowledge level about techniques and methods for efficient time management?	3.33	1.528	4.00	0.000	+ 0.67
8. Would you be able to teach lessons about techniques and methods for efficient time management	3.33	1.528	3.50	0.707	+ 0.17
9. How would you rate your knowledge level about change management?	4.33	1.155	3.50	0.707	- 0.83
10. Would you be able to teach lessons about change management?	4.33	1.155	3.50	0.707	- 0.83
11. How would you rate your knowledge level about techniques and methods to develop and improve collaboration skills?	3.67	1.528	4.00	0.000	+ 0.33
12. Would you be able to teach lessons about techniques and methods to develop and improve collaboration skills?	3.67	1.528	4.00	0.000	+ 0.33

Table 15 : Achievement of the learning outcomes among the participating teachers

The participating teachers seemed to have more knowledge specific TM5 topics and less in others. They were more familiar with, for example, change management but less familiar with techniques and methods for efficient time management. After the end of SLS, the mean values of most indicators slightly increased. The biggest increase can be noted in relation to the causes and consequences of stress. The mean value for the two indicators exploring the teachers' knowledge about change management decreased after SLS. The reasons for this, however, would need to be explored through follow-up interviews with the respondents.

When asked to describe the main learning outcomes of TM5, the classroom observers stated: "*New knowledge in managing time, tasks, planning goals, managing stress*." and "*Participants learned about how to motivate themselves for work, how to prioritise tasks and what methods to use to help them with this and also some collaborative exercises to improve cooperation*." These corroborate the relevance of TM5 and its alignment with the SLS objectives and outcomes as stated in the curriculum.

The trainers in each TM were asked to comment on whether they thought that their training unit met the participants' needs and which topics would need to be added to this TM, if any. The trainer of TM5 thought that: "*The content will be useful to them, maybe even more in the future, when they start working*." In terms of the topics to add to this TM on the key soft skills, she made the following suggestion: "*It's hard to say which topics would be more appropriate. Maybe preparation of CV and job interview, what are important characteristics of a leader, how to organise group/team work and projects etc*."

4.2.5.3 Participants' satisfaction level

The participants' satisfaction level with TM5 will be evaluated by means of the analysis of quantitative and qualitative data derived from the participants' survey. The results for the participating students (Table 16) and teachers (Table 17) will be presented separately in order to ascertain the level of satisfaction within each of these two groups of SLS participants. The respondents were asked to rate their level of satisfaction on a 5-point Likert-type scale from 5 (I strongly agree) to 1 (I strongly disagree).

	Students		Teachers	
Indicator	Mean	Std. dev.	Mean	Std. dev.
1. The expectations that I had for TM5 were met.	4.50	0.577	4.50	0.707
2. I found the teaching methods used in TM5 effective.	4.75	0.500	4.50	0.707
3. The time dedicated to each topic in TM5 was adequate.	4.75	0.500	4.50	0.707
4. The facilities (laboratories, computers, classrooms etc.) were appropriate for TM5.	4.75	0.500	4.50	0.707
5. I could easily understand the English used by the trainer of TM5.	4.75	0.500	4.50	0.707
6. The trainer of TM5 welcomed questions and answered them appropriately.	4.75	0.500	4.50	0.707
7. The professional terminology of TM5 was clearly presented.	4.75	0.500	4.50	0.707
8. I could easily understand the presented topics during TM5.	4.75	0.500	4.50	0.707
9. The trainer knew the subject well.	4.75	0.500	4.50	0.707
10. The trainer gave clear explanation on each topic.	4.75	0.500	4.50	0.707
11. The speed of the trainer was adequate.	4.75	0.500	4.50	0.707

Table 16 : Participant satisfaction level with TM5

The high means values of all indicators for TM5 show a very high level of satisfaction with this TM among both groups of participants.

The elements that the participants particularly liked were the trainer, different activities in groups and pairs, and role plays. They did not have any suggestions for the improvement of TM5.

4.3 SLS Teaching Methodology Evaluation

This section will place specific emphasis on the teaching methodology adopted in SLS. Quantitative and qualitative data will be derived from the pre- and post-tests for the participating students and teachers, classroom observations, and the interviews with the trainers.

The classroom observations revealed that a variety of teaching methods were used throughout SLS: direct instruction, case studies, experiential learning, simulations, smart games, task-based learning, group work, and class discussion. During TM5 two additional methods were used: "brain-drain" (creative brainstorming) and "mindfulness" (an exercise for better concentration).

The methods that seemed to have worked particularly well are experiential learning ("*The participants could try the various electronic devices on the simulator workstations or steering the ship on the navigation bridge.*"), direct instruction as an introduction into the basics of intermodality and the following simulations, pair work and group work engaged the participants in an active way, case studies encouraged team work ("*Pair-work in the Simultra game and group-work in the case study where participants had to discuss and reach a joint decision.*"), and simulations ("*The participants seemed engaged, the simulations were relevant to the student participants, the teachers could use them in their teaching*."). The observers noted that all methods were in line with the teaching objectives and thus appropriate to each task.

When self-evaluating their own teaching methods, the trainers agreed that the training methods that they used for each training unit were effective and in line with the training objectives. In their opinion, the strong points were:

- using practical work: "*Since training was supported by use of the navigational simulator I think that practical use and examples were beneficial to the students*.",
- theoretical introduction leading to practical applications: "*I gave a theoretical basis in the first part of the training and in the second we went through the practical use of procedures*.",
- using visuals: "*The PPT presentation was used and a video presentation*.",
- engaging the audience with questions: "*During the lesson questions were posed to the participants*.",
- pre-testing and post-testing the acquired knowledge and/or skills: "*I provided a pre-test and a post-test and students seemed to have grasped the concepts*.", and
- using different methods in the same unit to provide for variety: "*The training methods build on each other in a successive way: first theoretical reminder of the basics of transport organisation, then a practical case study followed by the use of a simulator. In this way, different methods were used and allowed participants with different learning capacities/preferences to acquire knowledge and competences. An overall understanding of transport operations and the freight forwarder's job could be gained*."

Moreover, in their opinion these methods worked particularly well because they kept the audience engaged through simulations, a combination of different methods, practical work and learning by doing, and case studies, for example: "*In my view, a combination of different methods always works well.*"

Although the trainers thought that their methods were effective and in line with the objectives, self-reflection generated several suggestions how their teaching might be improved:

- TM3 on warehouse analysis could be conducted in a warehouse: "*It would be great to have classes in a warehouse*.",
- more time would lend better to a combination of teaching methods: "*Work in groups or case studies would improve the methods, but additional time would be needed*.", and
- concrete examples could replace abstract direct instruction: "*The first teaching method was a bit too abstract for the participants. If I do this training again, I would give them an example of the results and then help them understand the exercise*."

In addition to using different teaching methods, the trainers tried to engage the audience by asking questions ("*I asked questions and the simulation was interactive*.") and changing the pace of the lesson ("*All in all, I think I managed to engage the audience through the variety of methods used and rhythm between group working and discussions with the class and some theoretical input. When I asked questions to the participants, they participated actively*."). One trainer experienced difficulties in engaging the participants because of their lack of theoretical knowledge and skills in maritime navigation ("*The participants were not familiar with the topics, but these was highlighted also by the project, thus the module was inserted in the SLS programme. It was difficult to interact with the participants as they have a lack of theoretical and for sure practical knowledge*."). Two additional difficulties that the trainers confronted were a perceived lack of time: "*For better efficiency it would be recommended to have more time available*.", and insufficient language skills: "*I could do better. Sometimes I had a feeling my explanation is a bit weak due to insufficient language knowledge (mine and theirs)*."

Next, the results for the participating students (Table 17) and teachers (Table 18) will be presented in order to ascertain the opinions of the teaching methods used during SLS within each of these two groups of SLS participants. The respondents were asked to rate their opinions on a 5-point Likert-type scale from 5 (I strongly agree) to 1 (I strongly disagree).

Indicator	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. I would like to use more often interactive methods (e.g. discussions, group and team work, etc.) for learning.	3.79	0.917	4.50	0.590	+ 0.71
2. I learn better with interactive methods (e.g. discussions, group and team work, etc.).	3.50	0.962	4.37	.576	+ 0.87
3. I would like to use more often smart games for learning.	3.86	0.848	4.38	0.711	+ 0.52
4. I learn better with smart games.	3.71	0.713	4.21	0.833	+ 0.50
5. I would like to use more often role-play exercises for learning.	3.29	1.049	3.87	1.076	+ 0.58
6. I learn better with role-play exercises.	3.25	1.110	3.83	0.963	+ 0.58
7. I would like to use more often interactive digital tools (e.g. simulators) for learning.	4.29	0.659	4.42	0.584	+ 0.13
8. I learn better with interactive digital tools (e.g. simulators).	4.00	0.770	4.50	0.590	+ 0.50

Indicator	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
9. I would like to use more often case studies, practical examples, etc. for learning.	4.04	0.693	4.25	0.608	+ 0.21
10. I learn better with case studies, practical examples, etc.	3.96	0.637	4.25	0.737	+ 0.29

Table 17 : Students' opinions of SLS teaching methodology

Before SLS, the participating students attributed the highest value to learning with interactive digital tools, followed by case studies and practical examples, smart games, then interactive methods, and finally role plays. In addition, the data show that before SLS they agreed that they would like all of these methods to be used in teaching more often. The only indicator whose value is close to 3 refers to role-play exercises. After the SLS experience where all of the listed methods were used in teaching, the mean values increased for all indicators without exception, most notably so for interactive methods and role-play exercises.

Indicator	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
1. How would you rate your competence level on using PowerPoint to deliver a lesson?	4.11	0.928	4.27	0.467	+ 0.16
2. Would you be able to use PowerPoint to deliver a lesson?	4.00	0.866	4.27	0.467	+ 0.27
3. How would you rate your competence level on using interactive methods during your lessons (e.g. discussions, group and team work, etc.)?	3.67	0.707	4.00	0.471	+ 0.33
4. Would you be able to use interactive methods during your lessons (e.g. discussions, group and team work, etc.)?	3.56	1.014	4.18	0.405	+ 0.62
5. How would you rate your competence level on using smart games during your lessons?	2.89	1.054	4.00	0.447	+ 1.11
6. Would you be able to use smart games during your lessons?	2.78	1.202	3.82	0.751	+ 1.04
7. How would you rate your competence level on using role-plays during your lessons?	2.78	0.972	3.91	0.701	+ 1.13
8. Would you be able to use role-plays during your lessons?	2.89	0.928	3.91	0.539	+ 1.02
9. How would you rate your competence level on using computer simulations during your lessons?	2.78	1.202	3.73	0.647	+ 0.95
10. Would you be able to use computer simulations during your lessons?	2.78	1.202	3.73	0.647	+ 0.95

Indicator	Pre-test mean (mean 1)	Std. dev.	Post-test mean (mean 2)	Std. dev.	mean 2 – mean 1
11. How would you rate your competence level on using case studies during your lessons?	3.00	0.707	3.91	0.302	+ 0.91
12. Would you be able to use case studies during your lessons?	3.00	0.707	3.91	0.302	+ 0.91

Table 18 : Teachers' opinions of SLS teaching methodology

The pre-test and post-test indicators for the participating teachers were designed to evaluate the level of competence that the teachers had in the use of the listed teaching methods, and their ability to use them in teaching. The mean values of the pre-test indicators show that the teachers felt most confident delivering PowerPoint presentations, followed by interactive methods. These are the only two indicators whose mean values exceed 3 (neither agree, nor disagree). Therefore, before SLS the teachers did not agree that they were able to use case studies, smart games, role-play exercises, nor computer simulations in their teaching. However, after attending SLS training where these methods were applied by the trainers in the various TMs, the participating teachers got familiar with the presented methods and, as a result, the mean values for the same indicators in the post-test increased considerably. The highest increase can be observed with reference to role-plays, smart games, simulations, and case studies.

5 Recommendations for Future Editions of SLS

In this section, we will briefly summarise the strengths or good practices of the pilot implementation of SLS and then focus on its weaknesses or points that would likely improve future SLS editions.

In terms of the general structure and content of SLS, the most important strength of SLS was the training programme curriculum that fully met the participants' needs and that can therefore be adopted in future SLS editions. In fact, the evaluation process has shown that all learning outcomes defined by the curriculum were met. The interviewed trainers did not put forward any suggestions on topics to be added to their TMs and agreed that the SLS curriculum was comprehensive and tailored to the needs of EQF Level 4 students and their teachers. The general structure and content of SLS was also the activity to which partners of the SLS project dedicated more time, so it is very positive that this effort has produced this result.

Students and teachers were highly satisfied by the organisation and information that were provided to them during and prior the SLS week. This included the assistance and general information provided by the organisers, the quality of the rooms at the hostel, the printed learning materials, the glossary of professional terms in English, the level of the English language used during SLS, and the facilities. Very importantly, one of the strengths was indeed the organisation of the training, the selection of expert trainers, the learner-centred teaching methodology, and the visit to the Port of Koper.

Another strength of SLS was the use of many types of innovative teaching and learning methods, which was noticed by all participants. The SLS relied on the simulations, games, and practical experience and activities specific to each TM. It is clear that such innovative teaching methods have to be better explored and carefully prepared: they can be replicated, but the trainer needs to develop a tailored-approach for the students. They also need to be revised to make sure that they are up-to-date.

At the same time, there are several points that the organisers are advised to improve for future SLS editions.

In terms of the organisation of accommodation and food, even if the former was very positive, the food experience was less satisfying. One point that could be improved is the provision of a balanced and quality food menu at the hostel. In fact, several participants mentioned that the hostel did not provide a healthy choice in its menu, including not enough fruit and vegetables. This point is of course not fully up to the SLS organisers, as the hostel and its canteen are externally sourced. Given that SLS suggested this low-cost accommodation (at 31 EUR/day for full-board accommodation), more information should be given in terms of the provision of food. The SLS organisers could specify that the SLS cannot influence the canteen of the hostel, that eating at the hostel can be pre-booked on the spot based on the menu, and that certain types of room have a kitchen, so the participants can organise their meals in an alternative way.

Another opportunity to consider when organising SLS is the possibility to develop the intercultural awareness and competence of the participants. There are many ways to foster the intercultural exchange among students, who in this first edition tended to spend time with people from their own country. For example, the organisers could set up working groups by mixing the participating teachers and students from different countries and linguistic backgrounds, and by introducing ice breaker games that would allow the participants to learn something from each other's languages and cultures.

In addition, although SLS was largely based on interactive and practical forms of teaching, the organisers can consider reducing the already minimal amount of theoretical classes. These classes in

particular would benefit from a short break in the otherwise 90-minute teaching and learning session. However, before proceeding to practical examples and student-centred tasks and activities, the students need to have a core knowledge of the theory underlying the practical examples. An option for reducing the time dedicated to face-to-face theoretical classes is flipped learning developed within a MOOC environment. In this case, the participants would acquire the necessary theoretical knowledge before attending SLS, which could then exclusively focus on the practical aspects and development of the participants' skills and competences.

The participants agreed that their level of English and the English used by the trainers allowed them to comfortably engage in SLS activities and tasks. However, this means that SLS in its present form is limited to participants with already good English language levels. If SLS aims to reach beyond the language boundaries posed by the language competence levels of its participants, then a combined twinning or content and language integrated approach (CLIL) would have to be planned, designed, and tested.

Although the facilities were largely appropriate to the teaching methodology and group size, the organisers should carefully consider the technical requirements of the simulators, which did not perform at their best, and the size of the computer rooms to make sure that they comfortably fit all the participants. Given the demands that modern and contemporary simulators and applications place on computer processing capabilities, the organisers should check whether all applications will be working as expected without causing disruptions to the teaching and learning process.

Finally, to allow the participants to attend more than one elective module, the structure of SLS could be reorganised so that fewer modules overlap. A related question is whether the same SLS content can fully match the different needs of the participating students and their teachers. The evaluation of the learning outcomes has shown that in some cases the progress made by the teachers did not match the progress made by their students. Obviously, the pre-SLS knowledge, skills, and competences of the participating teachers exceeded those of the students, which is why the students' progress was more significant. Therefore, the same core modules but separate elective modules for the participating students and teachers could be beneficial to both groups.

An additional module or summer school that would benefit the teachers and in turn EQF Level 4 students in logistics and transport would have to focus on teaching methodology. The evaluation has shown that the students would like student-centred teaching methods to be used more often and that they believe that they are efficient. However, their teachers most often are not suitably trained for their use. Therefore, the teachers can learn from examples that they experienced during SLS but it would also be beneficial for them to try these methods is simulated classes on their own.

The strengths and weaknesses identified in these chapters suggested that the instruments used for SLS evaluation seem to have served their purpose well. They allowed us to identify the strengths of SLS that we can build on in the future, and the weaknesses that we will try to overcome in future SLS iterations. Nevertheless, some results might have been significantly affected by the low number of respondents. In these cases, it would be necessary to use qualitative data collection methods instead, such as follow-up interviews with the participating teachers, to shed light onto unclear findings. It also seems that several participating teachers migrated between elective modules and then filled out the survey for all. This is why the question referring to which elective module they attended should be limited to a single answer while in the present version of the questionnaire it allows multiple answers. Finally, to receive reliable and comprehensive data the organisers should insist that the questionnaires be filled immediately after the conclusion of SLS at the organiser's premises.

6 Conclusions

The SLS project and the summer logistics school that was organised in September 2019 produced a very positive outcome. The evaluation results highlighted that this pilot edition was characterised by excellent organisation and comprehensive content, tailored to the participants' needs. Overall, according to the evaluation that was conducted, we can say that the goals of the school were fully met and the objectives reached. At the same time, this evaluation has also allowed the organisers to identify the weaknesses that will be overcome in future editions of SLS or implementation of any of its TMs.

Importantly, the evaluation process has also allowed us to identify the points in EQF Level 4 education in logistics and transport that require further research attention. These are:

- Teaching methodology education exclusively dedicated to EQF Level 4 teachers.
- Flipped learning developed within a MOOC environment that would focus on theoretical knowledge and thus allow SLS training to exclusively focus on the practical development of skills and competences.
- Training based on the principle of twinning of subject and English teachers that would allow participants with lower levels of English to concomitantly develop their knowledge, skills, and competences in two fields: subject matter and English as a foreign language for specific purposes.

References

[1] Hur, Jung Won, and Suhyun Suh. 2010. "The Development, Implementation, and Evaluation of a Summer School for English Language Learners". *Professional Educator*, 34 (2). Retrieved from: https://files.eric.ed.gov/fulltext/EJ988199.pdf (last accessed: 11 October 2019).

[2] ISIG, Centre of Expertise for Local Government Reform. 2018. "SESSION 3 – Understanding the Monitoring and Evaluation Methodology". Retrieved from: https://rm.coe.int/urso-methodology-for-monitoring-and-evaluation-of-training-programmes-/16808ace9c (last accessed: 11 October 2019).

[3] Morra Imas, Linda G., and Ray Rist. 2009. "The road to results: Designing and conducting effective development evaluations". Washington: The World Bank. Retrieved from: https://openknowledge.worldbank.org/bitstream/handle/10986/2699/52678.pdf?sequence=1&isAllowed=y (last accessed: 11 October 2019).

[4] Saaty, R.W. 1987. "The analytic hierarchy process—what it is and how it is used". Mathematical Modelling, 9(3-5), 161-176.

[5] Saaty, Thomas L. 2008. "Decision making with the analytic hierarchy process". *Int. J. Services Sciences*, 1(1), 83-98.

[6] TRAILS, Arcola Research. 2019. Evaluation Methodology and Toolkit In TRAILs.

7 Annexes: Evaluation Templates

7.1 Ex-ante Evaluation Templates

7.1.1 Annex 1: Pre-test for Students

Dear student participants,

Please answer the following questions linked to the topics and content of the SLS training programme as well as the methodologies and tools used. This will help the SLS project team to evaluate the students' preliminary knowledge, skills, and competences and to adapt the training modules if necessary.

Thank you.

Q1 - Part I – Students' preliminary theoretical knowledge for compulsory units of the SLS training course before SLS

Q2 - TM1 - Maritime and intermodal management

Q3 - 1. Do you know the Automatic Radar Plotting Aid (ARPA)?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q4 - 2. Do you know the Electronic Chart Display and Information System (ECDIS)?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q5 - 3. Do you know the main infrastructures and vehicles of maritime ports?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q6 - 4. Do you know the processes of arrival and departure of freight trains (trains and wagons characteristics, terminal types, etc.)?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well

◯ I don't know this at all

Q7 - 5. Do you know the functioning of intermodal rail-road platforms (main layout, main operations)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q8 - 6. Do you know the functioning of intermodal rail-road platforms (main layout, main operations)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q9 - TM4 - Transport Organisation

Q10 - 1. Do you know how to treat a transport demand?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q11 - 2. Do you know how to analyse customer’s demand for a transport mission?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q12 - 3. Do you know the KPIs for a transport mission and how to decide if a transport mission is feasible?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q13 - 4. Do you know how to prepare and implement a transport mission?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well

◯ I don't know this at all

Q14 - 5. Do you know how to monitor a transport mission?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q15 - 6. Do you know how to fill a CMR (bill of lading)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q16 - 7. Do you know what a Transport Management System (TMS) is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q17 - Part II – Students' preliminary theoretical knowledge for the optional unit they chose for the SLS training course before SLS

Q18 - Please select the Training Module you chose for SLS:

◯ TM2 - Supply Chain Management for Cold Products
◯ TM3 - Warehouse Analysis
◯ TM5 - Key Soft Skills

IF (1) Q18 = [1]
Q19 - TM2 - Supply Chain Management for Cold Products

IF (2) Q18 = [1]
Q20 - 1. Do you know what a supply chain is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (3) Q18 = [1]
Q21 - 2. Do you know the aims of a supply chain?

◯ I know this very well
◯ I know this well

◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (4) Q18 = [1]
Q22 - 3. Do you know the actors/partners of a supply chain?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (5) Q18 = [1]
Q23 - 4. Do you know the risks of a supply chain?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (6) Q18 = [1]
Q24 - 5. Do you know how to handle the transport of cold products?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (7) Q18 = [1]
Q25 - 6. Do you know what specific regulations and aspects you must take into account for the transport of cold products?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (8) Q18 = [1]
Q26 - 7. Do you know which specific measures you must apply for the transport of cold products?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (9) Q18 = [1]
Q27 - 8. Do you know how to operate in a cold chain warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (10) Q18 = [2]
Q28 - TM3 - Warehouse Analysis

IF (11) Q18 = [2]
Q29 - 1. Do you know how to calculate KPIs of a Logistics Warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (12) Q18 = [2]
Q30 - 2. Do you know how to assess KPIs of a Logistics Warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (13) Q18 = [2]
Q31 - 3. Do you know what a Warehouse Management System (WMS) is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (14) Q18 = [2]
Q32 - 4. Do you know the basic architecture of a WMS?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (15) Q18 = [2]
Q33 - 5. Do you know how to prepare an order in a warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this

◯ I don't know this very well
◯ I don't know this at all

IF (16) Q18 = [2]
Q34 - 6. Do you know warehouse documentation and warehouse procedures?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (17) Q18 = [2]
Q35 - 7. Do you know methods and/or techniques to optimise warehouse operations?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (18) Q18 = [3]
Q36 - TM5 - Key Soft Skills

IF (19) Q18 = [3]
Q37 - 1. Do you know the causes and consequences of stress?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (20) Q18 = [3]
Q38 - 2. Do you know how to cope with stress?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (21) Q18 = [3]
Q39 - 3. Do you know how to prioritise your missions and activities?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (22) Q18 = [3]

Q40 - 4. Do you know how to manage your time efficiently?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (23) Q18 = [3]
Q41 - 5. Do you know what change management is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (24) Q18 = [3]
Q42 - 6. Do you know how to develop and improve your collaboration skills?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q43 - Part III – Students' opinion on innovative teaching and training methods before SLS

Q44 - 1. I would like to use more often interactive methods (e.g. discussions, group and team work, etc.) for learning.

◯ Strongly agree
◯ Agree
◯ Don't know
◯ Disagree
◯ Strongly disagree

Q45 - 2. I learn better with interactive methods (e.g. discussions, group and team work, etc.).

◯ Strongly agree
◯ Agree
◯ Don't know
◯ Disagree
◯ Strongly disagree

Q46 - 3. I would like to use more often smart games for learning.

◯ Strongly agree
◯ Agree
◯ Don't know
◯ Disagree

◯ Strongly disagree

Q47 - 4. I learn better with smart games.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q48 - 5. I would like to use more often role-play exercises for learning.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q49 - 6. I learn better with role-play exercises.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q50 - 7. I would like to use more often interactive digital tools (e.g. simulators) for learning.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q51 - 8. I learn better with interactive digital tools (e.g. simulators).

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q52 - 9. I would like to use more often case studies, practical examples, etc. for learning.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q53 - 10. I learn better with case studies, practical examples, etc.

- ◯ Strongly agree
- ◯ Agree
- ◯ Don’t know
- ◯ Disagree
- ◯ Strongly disagree

7.1.2 Annex 2: Pre-test for Teachers

Dear participating teachers,

Please answer the following questions linked to the topics and content of the SLS training programme as well as your knowledge and habits of the methodologies and tools used. This will help the SLS project team to evaluate the teachers' preliminary knowledge, skills and competences.

Thank you.

Q1 - Part I – Teachers' preliminary knowledge about the compulsory TMs of the SLS training course before SLS

Q68 - TM1 - Maritime and Intermodal Management

Q2 - 1. How would you rate your knowledge level about the Automatic Radar Plotting Aid (ARPA)?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q3 - 2. Would you be able to teach lessons about ARPA in your classes?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

Q4 - 3. How would you rate your knowledge level about the Electronic Chart Display and Information System (ECDIS)?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q5 - 4. Would you be able to teach lessons about ECDIS in your classes?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

Q6 - 5. How would you rate your knowledge level about the main infrastructures and vehicles of maritime ports?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q7 - 6. Would you be able to teach lessons about the main infrastructures and vehicles of maritime ports?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

Q8 - 7. How would you rate your knowledge level about the coordination of the arrival and departure of freight trains?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q9 - 8. Would you be able to teach lessons about the coordination of the arrival and departure of freight trains?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

Q10 - 9. How would you rate your knowledge level about intermodal rail-road platforms?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q11 - 10. Would you be able to teach lessons about intermodal rail-road platforms?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

Q69 - TM4 - Transport Organisation

Q12 - 1. How would you rate your knowledge level about the analysis of a customer’s demand for a road freight transport operation?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q13 - 2. Would you be able to teach lessons about the analysis of a customer's demand for a road freight transport operation?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

Q14 - 3. How would you rate your knowledge level about studying the feasibility of a road freight transport operation?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q15 - 4. Would you be able to teach lessons about the feasibility of a road freight transport operation?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

Q16 - 5. How would you rate your knowledge level about the implementation of a transport mission?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

Q17 - 6. Would you be able to teach lessons about road freight transport operations (preparation, implementation, monitoring, etc.) in your classes?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic

◯ Don't know
◯ No, not very well
◯ No, not at all

Q18 - 7. How would you rate your knowledge level about Transport Management Systems (TMS)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q19 - 8. Would you be able to use a real or pedagogical TMS (e.g. simulator) during your classes?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

Q21 - Part II - Teachers' preliminary knowledge about the optional TMs of the SLS training course before SLS

Q20 - Please select the optional Training Module you have chosen for SLS:

◯ TM2 - Supply Chain Management for Cold Products
◯ TM3 - Warehouse Analysis
◯ TM5 - Key Soft Skills

IF (1) Q20 = [1]
Q26 - Part II - TM2 - Supply Chain Management for Cold Products

IF (2) Q20 = [1]
Q22 - 1. How would you rate your knowledge level about the difference of supply chain and logistics chain?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (3) Q20 = [1]
Q66 - 2. Would you be able to teach lessons on the difference of supply chain and logistics chain?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (4) Q20 = [1]
Q23 - 3. How would you rate your knowledge about the supply chain partners?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (4) Q20 = [1]
Q67 - 4. Would you be able to teach lessons on supply chain partners?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

IF (5) Q20 = [1]
Q24 - 5. How would you rate your knowledge about supply chain risks?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (6) Q20 = [1]
Q25 - 6. Would you be able to teach lessons about the supply chain risks in your classes?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

IF (7) Q20 = [1]
Q27 - 7. How would you rate your knowledge level about the transport of cold products?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (8) Q20 = [1]
Q28 - 8. Would you be able to teach lessons about the transport of cold products in your classes?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic

◯ Don't know
◯ No, not very well
◯ No, not at all

IF (9) Q20 = [1]
Q29 - 9. How would you rate your knowledge level about operations in a cold chain warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (10) Q20 = [1]
Q30 - 10. Would you be able to teach lessons about operating in a cold chain warehouse in your classes?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (11) Q20 = [2]
Q31 - Part II - TM3 - Warehouse Analysis

IF (12) Q20 = [2]
Q32 - 1. How would you rate your knowledge level about calculating KPIs for a logistics warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (13) Q20 = [2]
Q33 - 2. How would you rate your knowledge level about assessing KPIs for a logistics warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (14) Q20 = [2]
Q34 - 3. Would you be able to teach lessons about calculating and assessing KPIs for a logistics warehouse?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know

◯ No, not very well
◯ No, not at all

IF (15) Q20 = [2]
Q34_2 - 4. How would you rate your knowledge level about Warehouse Management Systems (WMS)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (16) Q20 = [2]
Q35 - 5. Would you be able to use a real or pedagogical WMS (e.g. simulator) during your classes?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (17) Q20 = [2]
Q36 - 6. How would you rate your knowledge level about warehouse documentation and warehouse procedures?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (18) Q20 = [2]
Q37 - 7. Would you be able to teach lessons about warehouse documentation and warehouse procedures?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (19) Q20 = [2]
Q38 - 8. How would you rate your knowledge level about methods and/or techniques to optimise warehouse operations?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (20) Q20 = [2]
Q39 - 9. Would you be able to teach lessons about methods and/or techniques to optimise warehouse operations?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

IF (21) Q20 = [3]
Q40 - Part II - TM5 - Key Soft Skills

IF (21) Q20 = [3]
IF (22) Q20 = [3]
Q41 - 1. How would you rate your knowledge level about the causes and consequences of stress?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (21) Q20 = [3]
IF (23) Q20 = [3]
Q42 - 2. Would you be able to teach lessons about the causes and consequences of stress?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well
- ◯ No, not at all

IF (21) Q20 = [3]
IF (24) Q20 = [3]
Q43 - 3. How would you rate your knowledge level about techniques and methods to cope with stress?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (21) Q20 = [3]
IF (25) Q20 = [3]
Q44 - 4. Would you be able to teach lessons about techniques and methods to cope with stress?

- ◯ Yes, I am an expert in this topic
- ◯ Yes, I know the topic
- ◯ Don't know
- ◯ No, not very well

◯ No, not at all

IF (21) Q20 = [3]
IF (26) Q20 = [3]
Q45 - 5. How would you rate your knowledge level about techniques and methods to prioritise missions and activities?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (21) Q20 = [3]
IF (27) Q20 = [3]
Q46 - 6. Would you be able to teach lessons about techniques and methods to prioritise missions and activities?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (21) Q20 = [3]
IF (28) Q20 = [3]
Q47 - 7. How would you rate your knowledge level about techniques and methods for efficient time management?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (21) Q20 = [3]
IF (29) Q20 = [3]
Q48 - 8. Would you be able to teach lessons about techniques and methods for efficient time management?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (21) Q20 = [3]
IF (30) Q20 = [3]
Q49 - 9. How would you rate your knowledge level about change management?

◯ I know this very well
◯ I know this well

◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (21) Q20 = [3]
IF (31) Q20 = [3]
Q50 - 10. Would you be able to teach lessons about change management?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

IF (21) Q20 = [3]
IF (32) Q20 = [3]
Q51 - 11. How would you rate your knowledge level about techniques and methods to develop and improve collaboration skills?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (21) Q20 = [3]
IF (33) Q20 = [3]
Q52 - 12. Would you be able to teach lessons about techniques and methods to develop and improve collaboration skills?

◯ Yes, I am an expert in this topic
◯ Yes, I know the topic
◯ Don't know
◯ No, not very well
◯ No, not at all

Q53 - Part III – Teachers' preliminary knowledge about innovative trainings methods and tools before SLS

Q54 - 1. How would you rate your competence level on using PowerPoint to deliver a lesson?

◯ I can do this very well
◯ I can do this well
◯ I don't know
◯ I can't do this very well
◯ I can't do this at all

Q55 - 2. Would you be able to use PowerPoint to deliver a lesson?

◯ Yes, I am an expert in using this tool
◯ Yes, I know this tool

◯ Don’t know
◯ No, not very well
◯ No, not at all

Q56 - 3. How would you rate your competence level on using interactive methods during your lessons (e.g. discussions, group and team work, etc.)?

◯ I can do this very well
◯ I can do this well
◯ I don’t know
◯ I can’t do this very well
◯ I can't do this at all

Q57 - 4. Would you be able to use interactive methods during your lessons (e.g. discussions, group and team work, etc.)?

◯ Yes, I am an expert in using this tool
◯ Yes, I know this tool
◯ Don’t know
◯ No, not very well
◯ No, not at all

Q58 - 5. How would you rate your competence level on using smart games during your lessons?

◯ I can do this very well
◯ I can do this well
◯ I don’t know
◯ I can’t do this very well
◯ I can't do this at all

Q59 - 6. Would you be able to use smart games during your lessons?

◯ Yes, I am an expert in using this tool
◯ Yes, I know this tool
◯ Don’t know
◯ No, not very well
◯ No, not at all

Q60 - 7. How would you rate your competence level on using role-plays during your lessons?

◯ I can do this very well
◯ I can do this well
◯ I don’t know
◯ I can’t do this very well
◯ I can't do this at all

Q61 - 8. Would you be able to use role-plays during your lessons?

◯ Yes, I am an expert in using this tool

◯ Yes, I know this tool
◯ Don’t know
◯ No, not very well
◯ No, not at all

Q62 - 9. How would you rate your competence level on using computer simulations during your lessons?

◯ I can do this very well
◯ I can do this well
◯ I don’t know
◯ I can’t do this very well
◯ I can't do this at all

Q63 - 10. Would you be able to use computer simulations during your lessons?

◯ Yes, I am an expert in using this tool
◯ Yes, I know this tool
◯ Don’t know
◯ No, not very well
◯ No, not at all

Q64 - 11. How would you rate your competence level on using case studies during your lessons?

◯ I can do this very well
◯ I can do this well
◯ I don’t know
◯ I can’t do this very well
◯ I can't do this at all

Q65 - 12. Would you be able to use case studies during your lessons?

◯ Yes, I am an expert in using this tool
◯ Yes, I know this tool
◯ Don’t know
◯ No, not very well
◯ No, not at all

7.2 Mid-term Evaluation Template

7.2.1 Annex 3: Classroom Observation

Dear observer,

please use this template to transfer the data taken during class observation.

Thank you.

Q1 - INTRODUCTION

Q2 - SLS Training Module number:

Q3 - SLS Training Module title:

Q4 – SLS Training Module Unit (TMU) title:

Q5 – Site/location of observation (institution, classroom number):

Q6 - Classroom type:
Tick all that apply.

- [ ] Conventional classroom
- [ ] Computer room
- [ ] Simulator room
- [ ] Other:

Q7 - Date of observation:

Q8 - Time when observation started:

Q9 - Time when observation finished:

Q10 - Observation carried out by:

Q11 - DIMENSION 1: ENVIRONMENT

Q12 - 1. Describe the space in which the event takes place - seating arrangement:
Tick all that apply.

- [ ] Individual pods
- [ ] Pair pods
- [ ] Group pods
- [ ] Roundtable
- [ ] Semicircle

Q13 - 2. The seating arrangement lends very well to the type of activity carried out.

- ○ I strongly agree.
- ○ I agree.
- ○ I neither agree nor disagree.
- ○ I disagree.
- ○ I strongly disagree.

Q14 - 3. Which three among these adjectives best describe the atmosphere of the space?
Tick all that apply.

- [ ] Unfriendly
- [ ] Welcoming
- [ ] Friendly
- [ ] Well-lit
- [ ] Cold
- [ ] Dark
- [ ] Forbidding
- [ ] Well ventilated
- [ ] Warm

Q15 - 4. Which other observations can you make on the environment?

Q16 - DIMENSION 2: PEOPLE

Q17 - 1. How many of the following categories of participants are present in the environment?

Q18 - Trainers:

Q19 - Student participants:

Q20 - Teacher participants:

Q21 - Other:

Q22 - 2. How would you describe the number of the people present regarding the space provided?

- ◯ There are too many
- ◯ The number is just right
- ◯ There are too few

Q23 - DIMENSION 3: OBJECTS

Q24 - 1. Is this type of equipment provided?

	Yes	No
Whiteboard and pens	◯	◯
Trainer's computer	◯	◯
Projector	◯	◯
PowerPoint clicker	◯	◯
Audio system (loudspeakers)	◯	◯
Computers for trainees	◯	◯
Simulator workstations	◯	◯
Other equipment used	◯	◯

Q25 - 2. Describe the type of other equipment provided:

Q26 - 3. Describe any issues or problems that the participants or trainers had using these objects.

Q27 - DIMENSION 4: PROCESS

Q28 - 1. Which method were used by the trainer in this TMU?
Tick all that apply.

- [ ] Direct instruction
- [ ] Case studies
- [ ] Experiential learning
- [ ] Simulations
- [ ] Games
- [ ] Task-based learning
- [ ] Group work
- [ ] Pair work
- [ ] Class discussion
- [ ] Other:

Q29 - 2. Which among these methods seemed to work particularly well? Justify.

Q30 - 3. Which among these methods was not in line with the learning outcomes? Justify.

Q31 - 4. Did any incident occur during this TMU?

- ◯ Yes
- ◯ No

IF (1) Q31 = [1]
IF (2) Q31 = [1]
Q32 - What happened?

IF (4) Q31 = [1]

Q33 - How was the incident dealt with?

IF (5) Q31 = [1]
Q34 - Who dealt with it?

IF (6) Q31 = [1]
Q35 - What was the result?

Q36 - 5. Could any problems or issues be identified that hindered learning?

◯ Yes
◯ No

IF (7) Q36 = [1]
Q37 - Describe them.

Q38 - 6.a. Use the rating scale in the table below to assess to what extent the following criteria were met - trainers.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
The trainer started the TMU on time and finished on time.	◯	◯	◯	◯	◯	◯
The trainer stated the objectives of the TMU at the beginning of the TMU.	◯	◯	◯	◯	◯	◯
The trainer presented the lesson plan at the beginning of the TMU.	◯	◯	◯	◯	◯	◯
The trainer briefly checked the previous knowledge of the participants at the beginning of the	◯	◯	◯	◯	◯	◯

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
TMU.						
The trainer summarised the main points at the end of the TMU.	○	○	○	○	○	○
The trainer explained the professional terminology.	○	○	○	○	○	○
The trainer occasionally checked participants' comprehension.	○	○	○	○	○	○
The trainer stimulated critical and autonomous thinking.	○	○	○	○	○	○
The trainer made eye contact with the participants.	○	○	○	○	○	○
The trainer stimulated class discussions.	○	○	○	○	○	○
The trainer used practical examples.	○	○	○	○	○	○
The trainer provided clear instructions.	○	○	○	○	○	○
The trainer used different teaching methods.	○	○	○	○	○	○
The trainer effectively used ICT equipment.	○	○	○	○	○	○
The trainer effectively dealt with questions.	○	○	○	○	○	○
The trainer logically connected the points within the TMU.	○	○	○	○	○	○
The trainer used well-designed visuals.	○	○	○	○	○	○
The trainer gave encouraging feedback.	○	○	○	○	○	○
The trainer used clear and correct English.	○	○	○	○	○	○
The level of English used by the trainer was appropriate for the participants.	○	○	○	○	○	○
The trainer created a positive and supportive classroom atmosphere.	○	○	○	○	○	○
The trainer is an expert in the topic of	○	○	○	○	○	○

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Not applicable
the TMU.						
The trainer was able to sustain the interest of the participants throughout the TMU.	◯	◯	◯	◯	◯	◯

Q39 - 6.b. Which among the things that the trainer did worked particularly well?

Q40 - 6.c. Which other observations can you make on the trainer?

Q41 - 7.a. Use the rating scale in the table below to assess to what extent the following criteria were met - participants.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The participants actively participated in the TMU.	◯	◯	◯	◯	◯
The participants asked questions.	◯	◯	◯	◯	◯
The participants did not have any problems with understanding English.	◯	◯	◯	◯	◯
The participants did not fiddle with their smartphones.	◯	◯	◯	◯	◯
The participants did not disrupt the TMU.	◯	◯	◯	◯	◯
The participants took notes.	◯	◯	◯	◯	◯
The participants readily answered the trainer's questions.	◯	◯	◯	◯	◯
The participants smoothly used ICT equipment.	◯	◯	◯	◯	◯
The participants were interested in the TMU.	◯	◯	◯	◯	◯
The participants understood what was going on.	◯	◯	◯	◯	◯
The participants did not chat with each other when not allowed.	◯	◯	◯	◯	◯

Q42 - 7.b. Choose three among these adjectives to describe the interaction of the participants with the trainers:

Tick all that apply.

- ☐ Collaborative
- ☐ Shy
- ☐ Reserved
- ☐ Bored
- ☐ Open

- [ ] Passive
- [ ] Intense
- [ ] Scarce
- [ ] Motivated
- [ ] Indifferent
- [ ] Satisfied

Q43 - 7.c. Which other observations can you make on the participants?

Q44 - DIMENSION 5: OUTCOMES

Q45 - 1. What would you describe as the main outcomes of this TMU?

Q46 - 2. Would you be able to provide any insight on how these might be improved?

Q47 - CONCLUSION

Q48 - 1. Are there any other comments that you would like to make on this TMU?

7.3 Post-ante Evaluation Templates

7.3.1 Annex 4: Post-test for Students

Dear student participants,

Please answer the following questions linked to the topics and content of the SLS training programme as well as the methodologies and tools used.

This will help the SLS project team to evaluate the students' knowledge and competences and to adapt the training modules if necessary.

Thank you.

Q1 - Part I – Students' theoretical knowledge for compulsory units of the SLS training course after SLS

Q2 - TM1 - Maritime and intermodal management

Q3 - 1. Do you know the Automatic Radar Plotting Aid (ARPA)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q4 - 2. Do you know the Electronic Chart Display and Information System (ECDIS)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q5 - 3. Do you know the main infrastructures and vehicles of maritime ports?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q6 - 4. Do you know the processes of arrival and departure of freight trains (trains and wagons characteristics, terminal types, etc.)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q7 - 5. Do you know the functioning of intermodal rail-road platforms (main layout, main operations)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q8 - 6. Do you know the functioning of intermodal rail-road platforms (main layout, main operations)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q9 - TM4 - Transport Organisation

Q10 - 1. Do you know how to treat a transport demand?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q11 - 2. Do you know how to analyse customer’s demand for a transport mission?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q12 - 3. Do you know the KPIs for a transport mission and how to decide if a transport mission is feasible?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q13 - 4. Do you know how to prepare and implement a transport mission?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q14 - 5. Do you know how to monitor a transport mission?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q15 - 6. Do you know how to fill a CMR (bill of lading)?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q16 - 7. Do you know what a Transport Management System (TMS) is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q17 - Part II – Students' theoretical knowledge for the optional unit they chose for the SLS training course after SLS

Q18 - Please select the Training Module you chose for SLS:

◯ TM2 - Supply Chain Management for Cold Products
◯ TM3 - Warehouse Analysis
◯ TM5 - Key Soft Skills

IF (1) Q18 = [1]
Q19 - TM2 - Supply Chain Management for Cold Products

IF (2) Q18 = [1]
Q20 - 1. Do you know what a supply chain is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (3) Q18 = [1]
Q21 - 2. Do you know the aims of a supply chain?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well

◯ I don't know this at all

IF (4) Q18 = [1]
Q22 - 3. Do you know the actors/partners of a supply chain?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (5) Q18 = [1]
Q23 - 4. Do you know the risks of a supply chain?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (6) Q18 = [1]
Q24 - 5. Do you know how to handle the transport of cold products?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (7) Q18 = [1]
Q25 - 6. Do you know what specific regulations and aspects you must take into account for the transport of cold products?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (8) Q18 = [1]
Q26 - 7. Do you know which specific measures you must apply for the transport of cold products?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (9) Q18 = [1]
Q27 - 8. Do you know how to operate in a cold chain warehouse?

◯ I know this very well

◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (10) Q18 = [2]
Q28 - TM3 - Warehouse Analysis

IF (11) Q18 = [2]
Q29 - 1. Do you know how to calculate KPIs of a Logistics Warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (12) Q18 = [2]
Q30 - 2. Do you know how to assess KPIs of a Logistics Warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (13) Q18 = [2]
Q31 - 3. Do you know what a Warehouse Management System (WMS) is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (14) Q18 = [2]
Q32 - 4. Do you know the basic architecture of a WMS?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (15) Q18 = [2]
Q33 - 5. Do you know how to prepare an order in a warehouse?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (16) Q18 = [2]
Q34 - 6. Do you know warehouse documentation and warehouse procedures?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (17) Q18 = [2]
Q35 - 7. Do you know methods and/or techniques to optimise warehouse operations?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (18) Q18 = [3]
Q36 - TM5 - Key Soft Skills

IF (19) Q18 = [3]
Q37 - 1. Do you know the causes and consequences of stress?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (20) Q18 = [3]
Q38 - 2. Do you know how to cope with stress?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (21) Q18 = [3]
Q39 - 3. Do you know how to prioritise your missions and activities?

- ◯ I know this very well
- ◯ I know this well
- ◯ I have a rough idea about this
- ◯ I don't know this very well
- ◯ I don't know this at all

IF (22) Q18 = [3]
Q40 - 4. Do you know how to manage your time efficiently?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (23) Q18 = [3]
Q41 - 5. Do you know what change management is?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

IF (24) Q18 = [3]
Q42 - 6. Do you know how to develop and improve your collaboration skills?

◯ I know this very well
◯ I know this well
◯ I have a rough idea about this
◯ I don't know this very well
◯ I don't know this at all

Q43 - Part III – Students' opinion on innovative teaching and training methods after SLS

Q44 - 1. I would like to use more often interactive methods (e.g. discussions, group and team work, etc.) for learning.

◯ Strongly agree
◯ Agree
◯ Don't know
◯ Disagree
◯ Strongly disagree

Q45 - 2. I learn better with interactive methods (e.g. discussions, group and team work, etc.).

◯ Strongly agree
◯ Agree
◯ Don't know
◯ Disagree
◯ Strongly disagree

Q46 - 3. I would like to use more often smart games for learning.

◯ Strongly agree
◯ Agree
◯ Don't know
◯ Disagree
◯ Strongly disagree

Q47 - 4. I learn better with smart games.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q48 - 5. I would like to use more often role-play exercises for learning.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q49 - 6. I learn better with role-play exercises.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q50 - 7. I would like to use more often interactive digital tools (e.g. simulators) for learning.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q51 - 8. I learn better with interactive digital tools (e.g. simulators).

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q52 - 9. I would like to use more often case studies, practical examples, etc. for learning.

◯ Strongly agree
◯ Agree
◯ Don’t know
◯ Disagree
◯ Strongly disagree

Q53 - 10. I learn better with case studies, practical examples, etc.

◯ Strongly agree

- ◯ Agree
- ◯ Don’t know
- ◯ Disagree
- ◯ Strongly disagree

7.3.2 Annex 5: Post-test for Teachers

Dear participating teachers,

Please answer the following questions linked to the topics and content of the SLS training programme as well as your knowledge and habits of the methodologies and tools used.

This will help the SLS project team to evaluate the teachers' knowledge, skills and competences acquired during SLS.

Thank you.

Q1 - Part I – Teachers' knowledge about the compulsory TMs of the SLS training course after SLS

Q68 - TM1 - Maritime and Intermodal Management

Q2 - 1. How would you rate your knowledge level about the Automatic Radar Plotting Aid (ARPA)?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

Q3 - 2. Would you be able to teach lessons about ARPA in your classes?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

Q4 - 3. How would you rate your knowledge level about the Electronic Chart Display and Information System (ECDIS)?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

Q5 - 4. Would you be able to teach lessons about ECDIS in your classes?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

Q6 - 5. How would you rate your knowledge level about the main infrastructures and vehicles of maritime ports?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

Q7 - 6. Would you be able to teach lessons about the main infrastructures and vehicles of maritime ports?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

Q8 - 7. How would you rate your knowledge level about the coordination of the arrival and departure of freight trains?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

Q9 - 8. Would you be able to teach lessons about the coordination of the arrival and departure of freight trains?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

Q10 - 9. How would you rate your knowledge level about intermodal rail-road platforms?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

Q11 - 10. Would you be able to teach lessons about intermodal rail-road platforms?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

Q69 - TM4 - Transport Organisation

Q12 - 1. How would you rate your knowledge level about the analysis of a customer’s demand for a road freight transport operation?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

Q13 - 2. Would you be able to teach lessons about the analysis of a customer's demand for a road freight transport operation?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

Q14 - 3. How would you rate your knowledge level about studying the feasibility of a road freight transport operation?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

Q15 - 4. Would you be able to teach lessons about the feasibility of a road freight transport operation?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

Q16 - 5. How would you rate your knowledge level about the implementation of a transport mission?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

Q17 - 6. Would you be able to teach lessons about road freight transport operations (preparation, implementation, monitoring, etc.) in your classes?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic

◌ Don't know
◌ No, not very well
◌ No, not at all

Q18 - 7. How would you rate your knowledge level about Transport Management Systems (TMS)?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

Q19 - 8. Would you be able to use a real or pedagogical TMS (e.g. simulator) during your classes?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

Q21 - Part II - Teachers' knowledge about the optional TMs of the SLS training course after SLS

Q20 - Please select the optional Training Module you have chosen for SLS:

◌ TM2 - Supply Chain Management for Cold Products
◌ TM3 - Warehouse Analysis
◌ TM5 - Key Soft Skills

IF (1) Q20 = [1]
Q26 - Part II - TM2 - Supply Chain Management for Cold Products

IF (2) Q20 = [1]
Q22 - 1. How would you rate your knowledge level about the difference of supply chain and logistics chain?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (3) Q20 = [1]
Q66 - 2. Would you be able to teach lessons on the difference of supply chain and logistics chain?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (4) Q20 = [1]
Q23 - 3. How would you rate your knowledge about the supply chain partners?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

IF (4) Q20 = [1]
Q67 - 4. Would you be able to teach lessons on supply chain partners?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

IF (5) Q20 = [1]
Q24 - 5. How would you rate your knowledge about supply chain risks?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

IF (6) Q20 = [1]
Q25 - 6. Would you be able to teach lessons about the supply chain risks in your classes?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

IF (7) Q20 = [1]
Q27 - 7. How would you rate your knowledge level about the transport of cold products?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

IF (8) Q20 = [1]
Q28 - 8. Would you be able to teach lessons about the transport of cold products in your classes?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic

◌ Don't know
◌ No, not very well
◌ No, not at all

IF (9) Q20 = [1]
Q29 - 9. How would you rate your knowledge level about operations in a cold chain warehouse?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (10) Q20 = [1]
Q30 - 10. Would you be able to teach lessons about operating in a cold chain warehouse in your classes?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (11) Q20 = [2]
Q31 - Part II - TM3 - Warehouse Analysis

IF (12) Q20 = [2]
Q32 - 1. How would you rate your knowledge level about calculating KPIs for a logistics warehouse?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (13) Q20 = [2]
Q33 - 2. How would you rate your knowledge level about assessing KPIs for a logistics warehouse?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (14) Q20 = [2]
Q34 - 3. Would you be able to teach lessons about calculating and assessing KPIs for a logistics warehouse?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know

◌ No, not very well
◌ No, not at all

IF (15) Q20 = [2]
Q34_2 - 4. How would you rate your knowledge level about Warehouse Management Systems (WMS)?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (16) Q20 = [2]
Q35 - 5. Would you be able to use a real or pedagogical WMS (e.g. simulator) during your classes?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (17) Q20 = [2]
Q36 - 6. How would you rate your knowledge level about warehouse documentation and warehouse procedures?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (18) Q20 = [2]
Q37 - 7. Would you be able to teach lessons about warehouse documentation and warehouse procedures?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (19) Q20 = [2]
Q38 - 8. How would you rate your knowledge level about methods and/or techniques to optimise warehouse operations?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (20) Q20 = [2]
Q39 - 9. Would you be able to teach lessons about methods and/or techniques to optimise warehouse operations?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

IF (21) Q20 = [3]
Q40 - Part II - TM5 - Key Soft Skills

IF (21) Q20 = [3]
IF (22) Q20 = [3]
Q41 - 1. How would you rate your knowledge level about the causes and consequences of stress?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

IF (21) Q20 = [3]
IF (23) Q20 = [3]
Q42 - 2. Would you be able to teach lessons about the causes and consequences of stress?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well
- ◌ No, not at all

IF (21) Q20 = [3]
IF (24) Q20 = [3]
Q43 - 3. How would you rate your knowledge level about techniques and methods to cope with stress?

- ◌ I know this very well
- ◌ I know this well
- ◌ I have a rough idea about this
- ◌ I don't know this very well
- ◌ I don't know this at all

IF (21) Q20 = [3]
IF (25) Q20 = [3]
Q44 - 4. Would you be able to teach lessons about techniques and methods to cope with stress?

- ◌ Yes, I am an expert in this topic
- ◌ Yes, I know the topic
- ◌ Don't know
- ◌ No, not very well

◌ No, not at all

IF (21) Q20 = [3]
IF (26) Q20 = [3]
Q45 - 5. How would you rate your knowledge level about techniques and methods to prioritise missions and activities?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (21) Q20 = [3]
IF (27) Q20 = [3]
Q46 - 6. Would you be able to teach lessons about techniques and methods to prioritise missions and activities?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (21) Q20 = [3]
IF (28) Q20 = [3]
Q47 - 7. How would you rate your knowledge level about techniques and methods for efficient time management?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (21) Q20 = [3]
IF (29) Q20 = [3]
Q48 - 8. Would you be able to teach lessons about techniques and methods for efficient time management?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (21) Q20 = [3]
IF (30) Q20 = [3]
Q49 - 9. How would you rate your knowledge level about change management?

◌ I know this very well
◌ I know this well

◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (21) Q20 = [3]
IF (31) Q20 = [3]
Q50 - 10. Would you be able to teach lessons about change management?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

IF (21) Q20 = [3]
IF (32) Q20 = [3]
Q51 - 11. How would you rate your knowledge level about techniques and methods to develop and improve collaboration skills?

◌ I know this very well
◌ I know this well
◌ I have a rough idea about this
◌ I don't know this very well
◌ I don't know this at all

IF (21) Q20 = [3]
IF (33) Q20 = [3]
Q52 - 12. Would you be able to teach lessons about techniques and methods to develop and improve collaboration skills?

◌ Yes, I am an expert in this topic
◌ Yes, I know the topic
◌ Don't know
◌ No, not very well
◌ No, not at all

Q53 - Part III – Teachers' knowledge about innovative trainings methods and tools after SLS

Q54 - 1. How would you rate your competence level on using PowerPoint to deliver a lesson?

◌ I can do this very well
◌ I can do this well
◌ I don't know
◌ I can't do this very well
◌ I can't do this at all

Q55 - 2. Would you be able to use PowerPoint to deliver a lesson?

◌ Yes, I am an expert in using this tool
◌ Yes, I know this tool

◌ Don’t know
◌ No, not very well
◌ No, not at all

Q56 - 3. How would you rate your competence level on using interactive methods during your lessons (e.g. discussions, group and team work, etc.)?

◌ I can do this very well
◌ I can do this well
◌ I don’t know
◌ I can’t do this very well
◌ I can't do this at all

Q57 - 4. Would you be able to use interactive methods during your lessons (e.g. discussions, group and team work, etc.)?

◌ Yes, I am an expert in using this tool
◌ Yes, I know this tool
◌ Don’t know
◌ No, not very well
◌ No, not at all

Q58 - 5. How would you rate your competence level on using smart games during your lessons?

◌ I can do this very well
◌ I can do this well
◌ I don’t know
◌ I can’t do this very well
◌ I can't do this at all

Q59 - 6. Would you be able to use smart games during your lessons?

◌ Yes, I am an expert in using this tool
◌ Yes, I know this tool
◌ Don’t know
◌ No, not very well
◌ No, not at all

Q60 - 7. How would you rate your competence level on using role-plays during your lessons?

◌ I can do this very well
◌ I can do this well
◌ I don’t know
◌ I can’t do this very well
◌ I can't do this at all

Q61 - 8. Would you be able to use role-plays during your lessons?

◌ Yes, I am an expert in using this tool

◌ Yes, I know this tool
◌ Don’t know
◌ No, not very well
◌ No, not at all

Q62 - 9. How would you rate your competence level on using computer simulations during your lessons?

◌ I can do this very well
◌ I can do this well
◌ I don’t know
◌ I can’t do this very well
◌ I can't do this at all

Q63 - 10. Would you be able to use computer simulations during your lessons?

◌ Yes, I am an expert in using this tool
◌ Yes, I know this tool
◌ Don’t know
◌ No, not very well
◌ No, not at all

Q64 - 11. How would you rate your competence level on using case studies during your lessons?

◌ I can do this very well
◌ I can do this well
◌ I don’t know
◌ I can’t do this very well
◌ I can't do this at all

Q65 - 12. Would you be able to use case studies during your lessons?

◌ Yes, I am an expert in using this tool
◌ Yes, I know this tool
◌ Don’t know
◌ No, not very well
◌ No, not at all

7.3.3 Annex 6: Participants' Survey

Dear participants,

Thank you for attending SLS. Your ideas and opinions are very valuable to SLS organisers and will be used to evaluate the success of the first edition of SLS as well as improve possible future SLS editions.

Please take 10-20 minutes to reflect on your experience and complete this anonymous survey.

Your feedback is highly appreciated.

Q1 - SECTION 1: SLS - GENERAL QUESTIONS

Q2 - 1. I am a:

◯ Teacher
◯ Student
◯ Other:

Q3 - 2. Was SLS your first experience as participant in a summer school?

◯ Yes
◯ No

Q4 - 3. I am satisfied with the assistance and information provided by SLS organisers before SLS.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q5 - 3a. Please explain your opinion on the assistance and information provided to you before SLS:

Q6 - 4. The accommodation that was provided to us was appropriate.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q7 - 4a. Please explain your opinion on the level of accommodation provided and give examples:

Q8 - 5. Overall, the knowledge that I previously had on the topics was adequate to participate in SLS.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q9 - 5b. Please explain your opinion on the adequacy of your previous knowledge and provide examples:

Q10 - 6. The printed materials that I received at the beginning of SLS were useful.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q11 - 6a. Please explain your opinion on the usefulness of these materials and provide examples

Q12 - 7. The glossary of professional terms in English that I received before SLS was helpful.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q13 - 7a. Please explain your opinion on the usefulness of the glossary of professional terms and provide examples:

Q14 - 8. I could easily understand and communicate in English with other participants during SLS.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree

◯ Strongly disagree

Q15 - 8a. Please explain your opinion on your communication in English and provide examples:

Q16 - 9. The training programme of SLS met my needs.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q17 - 9a. Please explain your opinion on how SLS training programme met your needs and provide examples:

IF (1) Q2 = [2]
Q18 - 10. In your opinion, which knowledge, skills, methods you learned during SLS will be most useful in your future career?

IF (2) Q2 = [1]
Q19 - 10a. Which knowledge, skills, methods learned during SLS will you share with other colleagues?

IF (3) Q2 = [1]
Q20 - 10b. Which knowledge, skills, methods learned during SLS will you implement into your teaching?

IF (4) Q2 = [2]
Q21 - 11. Would you recommend the SLS to your school friends?

◯ Yes
◯ No
◯ Don't know

IF (5) Q21 = [1, 2]
Q22 - 11a. Please explain why you would or would not recommend SLS to your school friends:

IF (6) Q2 = [1]
Q23 - 11. Would you recommend the SLS to your fellow teachers?

◯ Yes
◯ No
◯ Don't know

IF (7) Q23 = [1, 2]
Q24 - 11a. Please explain why you would or would not recommend SLS to your fellow teachers:

Q25 - 12. What do you think worked particularly well at the SLS?

Q26 - 13. What do you think did not work well at the SLS?

Q27 - 14. What do you wish there had been more of?

Q28 - 15. What is your opinion of the visit to the Port of Koper?

Q29 - 16. Do you have any general suggestions for future improvements to SLS?

◯ Yes
◯ No
◯ Don't know

IF (8) Q29 = [1]

Q30 - 16a. Which suggestions would you like to make?

Q31 - SECTION 2: SLS - SPECIFIC QUESTIONS - TM1 – MARITIME AND INTERMODAL MANAGEMENT

Q32 - 1. Please select the degree to which you agree with these statements on Training Module 1 – Maritime and Intermodal Management.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The expectations that I had for TM1 were met.	◯	◯	◯	◯	◯
I found the teaching methods used in TM1 effective.	◯	◯	◯	◯	◯
The time dedicated to each topic in TM1 was adequate.	◯	◯	◯	◯	◯
The facilities (laboratories, computers, classrooms etc.) were appropriate for TM1.	◯	◯	◯	◯	◯
I could easily understand the English used by the trainer of TM1.	◯	◯	◯	◯	◯
The trainer of TM1 welcomed questions and answered them appropriately.	◯	◯	◯	◯	◯
The professional terminology of TM1 was clearly presented.	◯	◯	◯	◯	◯
I could easily understand the presented topics during TM1.	◯	◯	◯	◯	◯
The trainer knew the subject well.	◯	◯	◯	◯	◯
The trainer gave clear explanation on each topic.	◯	◯	◯	◯	◯
The speed of the trainer was adequate.	◯	◯	◯	◯	◯

Q33 - 2. What did you particularly like about TM1?

Q34 - 3. What did you not like very much about TM1?

Q35 - 4. Are there any other comments that you would like to make on TM1?

Q36 - SECTION 3: SLS - SPECIFIC QUESTIONS - TM4 – TRANSPORT ORGANISATION

Q37 - 1. Please select the degree to which you agree with these statements on Training Module 4 – Transport Organisation.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The expectations that I had for TM4 were met.	◯	◯	◯	◯	◯
I found the teaching methods used in TM4 effective.	◯	◯	◯	◯	◯
The time dedicated to each topic in TM4 was adequate.	◯	◯	◯	◯	◯
The facilities (laboratories, computers, classrooms etc.) were appropriate for TM4.	◯	◯	◯	◯	◯
I could easily understand the English used by the trainer of TM4.	◯	◯	◯	◯	◯
The trainer of TM4 welcomed questions and answered them appropriately.	◯	◯	◯	◯	◯
The professional terminology of TM4 was clearly presented.	◯	◯	◯	◯	◯
I could easily understand the presented topics during TM4.	◯	◯	◯	◯	◯
The trainer knew the subject well.	◯	◯	◯	◯	◯
The trainer gave clear explanation on each topic.	◯	◯	◯	◯	◯
The speed of the trainer was adequate.	◯	◯	◯	◯	◯

Q38 - 2. What did you particularly like about TM4?

Q39 - 3. What did you not like very much about TM4?

Q40 - 4. Are there any other comments that you would like to make on TM4?

Q41 - SECTION 3: SLS - SPECIFIC QUESTIONS - OPTIONAL MODULES

Q42 - Which of the optional modules did you attend?

◯ TM2 – Supply Chain Management of Cold Products
◯ TM3– Warehouse Analysis
◯ TM5 – Key Soft Skills

IF (9) Q42 = [1]
Q43 - TM2 – SUPPLY CHAIN MANAGEMENT OF COLD PRODUCTS

IF (10) Q42 = [1]
Q44 - 1. Please select the degree to which you agree with these statements on Training Module 2 - Supply Chain Management of Cold Products.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The expectations that I had for TM2 were met.	◯	◯	◯	◯	◯
I found the teaching methods used in TM2 effective.	◯	◯	◯	◯	◯
The time dedicated to each topic in TM2 was adequate.	◯	◯	◯	◯	◯
The facilities (laboratories, computers, classrooms etc.) were appropriate for TM2.	◯	◯	◯	◯	◯
I could easily understand the English used by the trainer of TM2.	◯	◯	◯	◯	◯
The trainer of TM2 welcomed questions and answered them appropriately.	◯	◯	◯	◯	◯
The professional terminology of TM2 was clearly presented.	◯	◯	◯	◯	◯
I could easily understand the presented topics during TM2.	◯	◯	◯	◯	◯
The trainer knew the subject well.	◯	◯	◯	◯	◯
The trainer gave clear explanation on each topic.	◯	◯	◯	◯	◯
The speed of the trainer was adequate.	◯	◯	◯	◯	◯

IF (11) Q42 = [1]
Q45 - 2. What did you particularly like about TM2?

IF (12) Q42 = [1]
Q46 - 3. what did you not like very much about TM2?

IF (13) Q42 = [1]
Q47 - 4. Are there any other comments that you would like to make on TM2?

IF (14) Q42 = [2]

Q48 - TM3 - WAREHOUSE ANALYSIS

IF (15) Q42 = [2]
Q49 - 1. Please select the degree to which you agree with these statements on Training Module 3 – Warehouse Analysis.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The expectations that I had for TM3 were met.	◯	◯	◯	◯	◯
I found the teaching methods used in TM3 effective.	◯	◯	◯	◯	◯
The time dedicated to each topic in TM3 was adequate.	◯	◯	◯	◯	◯
The facilities (laboratories, computers, classrooms etc.) were appropriate for TM3.	◯	◯	◯	◯	◯
I could easily understand the English used by the trainer of TM3.	◯	◯	◯	◯	◯
The trainer of TM3 welcomed questions and answered them appropriately.	◯	◯	◯	◯	◯
The professional terminology of TM3 was clearly presented.	◯	◯	◯	◯	◯
I could easily understand the presented topics during TM3.	◯	◯	◯	◯	◯
The trainer knew the subject well.	◯	◯	◯	◯	◯
The trainer gave clear explanation on each topic.	◯	◯	◯	◯	◯
The speed of the trainer was adequate.	◯	◯	◯	◯	◯

IF (16) Q42 = [2]
Q50 - 2. what did you particularly like about TM3?

IF (17) Q42 = [2]
Q51 - 3. what did you not like very much about TM3?

IF (18) Q42 = [2]
Q52 - 4. Are there any other comments that you would like to make on TM3?

IF (19) Q42 = [3]
Q53 - TM5 - KEY SOFT SKILLS

IF (20) Q42 = [3]
Q54 - 1. Please select the degree to which you agree with these statements on Training Module 5 – Key Soft Skills.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The expectations that I had for TM5 were met.	◯	◯	◯	◯	◯
I found the teaching methods used in TM5 effective.	◯	◯	◯	◯	◯
The time dedicated to each topic in TM5 was adequate.	◯	◯	◯	◯	◯
The facilities (laboratories, computers, classrooms etc.) were appropriate for TM5.	◯	◯	◯	◯	◯
I could easily understand the English used by the trainer of TM5.	◯	◯	◯	◯	◯
The trainer of TM5 welcomed questions and answered them appropriately.	◯	◯	◯	◯	◯
The professional terminology of TM5 was clearly presented.	◯	◯	◯	◯	◯
I could easily understand the presented topics during TM5.	◯	◯	◯	◯	◯
The trainer knew the subject well.	◯	◯	◯	◯	◯
The trainer gave clear explanation on each topic.	◯	◯	◯	◯	◯
The speed of the trainer was adequate.	◯	◯	◯	◯	◯

IF (21) Q42 = [3]
Q55 - 2. What did you particularly like about TM5?

IF (22) Q42 = [3]
Q56 - 3. What did you not like very much about TM5?

IF (23) Q42 = [3]
Q57 - 4. Are there any other comments that you would like to make on TM5?

7.3.4 Annex 7: Interviews with Trainers

Dear Trainer,

thank you for participating in SLS. We will reflect on your experience and distinguish positive and negative and upgradable issues experienced during SLS training. Your response will guide the coordinators as they evaluate the programme and craft improvements for future summer schools. Your perspectives are very valuable to SLS and will yield important data.

Thank you for your feedback.

Q1 - SECTION 1: SLS METHODOLOGY

Q2 - 1. My training methods were effective.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q3 - 2. Please explain your opinion on the efficiency of your training methods and provide examples:

Q4 - 3. I effectively engaged the audience.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q5 - 4. Please explain your opinion on engaging the audience and provide examples:

Q6 - 5. I effectively conveyed information.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q7 - 6. Please explain your opinion on your conveying information and provide examples:

Q8 - 7. During the lectures the interest of the participants was at a high level.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

Q9 - 8. Please explain your opinion on maintaining the interest of the audience and provide examples:

Q10 - 9. Which training methods that you used worked particularly well with the audience (tick all that apply):
Tick all that apply.

- ☐ Direct teaching
- ☐ Class discussions
- ☐ Work in groups
- ☐ Smart games
- ☐ Software simulations
- ☐ Case studies
- ☐ Calculation exercises
- ☐ Role play
- ☐ Other:

Q11 - 10. Please explain the reasons why these methods worked particularly well:

Q12 - 11. Do you see any possibility for improvement in the teaching methods that you used?

- ◯ Yes
- ◯ No
- ◯ Don't know

IF (1) Q12 = [1]
Q13 - Please briefly describe these possible improvements.

Q14 - 12. The learning and teaching materials that I used were adequate to the level of knowledge of the

participants.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q15 - 13. Please explain your opinion on the adequacy of the learning and teaching materials and provide examples:

Q16 - SECTION 2: SLS CONTENT AND STRUCTURE

Q17 - 1. The content of my training unit met the participants' needs.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q18 - 1a. Please explain your opinion on meeting the participants' needs and provide examples:

Q19 - 2. The time allocated to your training unit(s) was adequate.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q20 - 2a. Please explain your opinion on the allocated time for your training unit(s) and provide examples:

Q21 - 3. The lecture room(s) were adequate and comfortable.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree

◯ Disagree
◯ Strongly disagree

Q22 - 3a. Please explain your opinion on the adequacy and comfort of the lecture room(s) and provide examples:

Q23 - 4. Is it necessary to include new topics into your training unit(s)?

◯ Yes
◯ No
◯ Don't know

IF (2) Q23 = [1]
Q24 - 4a. Which topics would have to be included?

Q25 - 5. Do you have any other suggestions for the improvement of your training unit(s)?

◯ Yes
◯ No
◯ Don't know

IF (3) Q25 = [1]
Q26 - 5a. Which improvements could you suggest?

Q27 - 6. Did you experience any problems during your lectures?

◯ Yes
◯ No
◯ Don't know

IF (4) Q27 = [1]
Q28 - 6a. Which problems did you experience?

Q29 - SECTION 3: SLS ORGANISATION

Q30 - 1. I am satisfied with the information provided tome before SLS.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree

Q31 - 1a. Please explain your opinion on the information that you received and provide examples:

Q32 - 2. I am satisfied with the accommodation provided tome during SLS.

◯ Strongly agree
◯ Agree
◯ Neither agree nor disagree
◯ Disagree
◯ Strongly disagree
◯ I did not spend any night at the accommodation provided.

Q33 - 2a. Please explain your opinion on the accommodation and provide examples:

Q34 - 3. Do you have any other suggestions for future improvements to the organisation of SLS?

◯ Yes
◯ No
◯ Don't know

IF (5) Q34 = [1]
Q35 - 3a. Which suggestions would you make?

Q36 - SECTION 4: CONCLUSION

Q37 - Are there any further comments that you would like to make?