



## Intellectual Output 4: The Work Environment in a Global Context

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### Background:

Nowadays the road construction industry has massive markets, and the sizes of the projects have grown significantly. The working environment has become more international, which means that communication language is often in English. Therefore, communicate in foreign language with colleagues is an important skill in a global working environment. In addition, digitalization or data exchange makes it possible for people not to be in the same offices but even around the world. Consequently, to exchange information, to make decisions based on discussions and arguments, are vital skills to achieve high quality results.

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The first goal of the IO4 output of the inROAD project was to create a lifetime opportunity and experience for students from different countries to work in an international environment. To try how truly international environment for students must be done, four one-week workshops of the inROAD project for this purpose was implemented and analyzed for finding best practices. The idea is was to find an experience in where student must collaborate together specific assignment with a timeline, deadline and demands for concrete solutions in English.

The second goal of the IO4 output of the inROAD project was to offer for the teachers a perfect moment to exchange knowledge within the didactic areas to the curriculum, to increase their didactics skills as well as supply new material in English. For this reason, during the workshops the problem-based learning (PBL) method was implemented during the workshops. The PBL skill that students were expected to have are problem solving, tolerating failing, flexibility, reception of new ideas, bold to test the ideas. Thus, the students were challenges for exchange knowledge, and learn to express yourselves and defend your position using sound argumentation and finding compromises all using a foreign language.

Finally, the idea is to develop all the latest content to lift our students and their competences into the next decade. Here our experience from the workshops and documentation are presented and hopefully will be very inspiring to others.

## Results of IO4:

To reach the above-mentioned goals, four workshops were implemented in Oulu (10/2021), Jönköping (02/2022), Aalborg (10/2022), and Trondheim (02/2023). Five (5) students from each country were selected based on their application forms for the workshop. The language during the lectures, presentations, materials, and project working in groups during the workshops was English. During the project work, the students were divided into five groups so that each group had one student from each country. PBL method used in project work was forced students to communicate and argument in English when their discussed each other about the road design problems to be solved.

### 1) Application forms:

Workshops in Oulu and Jönköping only the motivation of the participation was asked. Each teacher had different methods to advertise the workshop. For example, all the students from Jönköping and Aalborg were answering in their native languages (Swedish and Danish) in the first workshop in Oulu. Based on these students' motivations arguments, only few students were coming to workshop to improve their English language, team working skills or problem-solving skills. Few students also mention their interest in working in an international environment.

Workshops in Aalborg and Trondheim, the students were asked to assess their English communication skills (A1-A2 (Basic User), B1-B2 (Independent User), and C1-C2 (Proficient User), CEFG scale), as can be seen in Table. Based on the Table all the students had at least the necessary skills (B1) to communicate fluently without effort.

	A1	B1	C1	A2	B2	C2
Aalborg		2	6		6	6
Trondheim		6	3	2	7	2

Since the goal of the workshops were to learn Novapoint, only few students were mentioned their interest to improve English or working international collaboration. Most of the students have experience of PBL.

It was found that the application form with asking skills of Novapoint and English, and experience in problem-based teamwork is effective way to present expectations to student what are needed to complete workshop.

### 2) Workshop assessment by student focus group:

In Aalborg and Trondheim workshops, students were interviewed as a focus group Finland, Sweden, Norway, and Denmark. The expectation was to have an assessment of students, for example about the expectations, learning experiences during the workshop, and experience of working in international group. This focus group interview was implemented in the end of third day, when the students had already gotten to know each other and were encouraged to use the English language.

Based on the focus group interview, all agree that their main expectation from the workshop, learning Novapoint skills, was fulfilled somehow. Finnish and Swedish focus group were also looking forward to improving their English skills in a more professional environment. All the focus groups found that working in groups is an enjoyable way to learn more about road design using Novapoint, since it is an efficient way to work and discuss problems with others. In addition, working in groups was found to be an excellent way to

share Novapoint ability between experts and beginners. The students think that they did develop their English skills while working on group. Besides of that the students get an idea the importance how to communicate and behave each other when new group project is starting, especially when the English-speaking skills varies between group members. Working in international groups clearly shows why common language is important. The students found it difficult to explain the problem if the language in Novapoint was for example in Finnish. Thus, in Trondheim workshop all the students were instructed to use English in Novapoint before the workshop. Furthermore, the Finish focus group notices that different working behaviors, rules, or standards in an international environment is important to gain control of the project. In general, it can be said that all the students gained a lot of new skills for their future careers.

Therefore, the interview of focus group is one way find out how well problem-based learning (PBL) method is fitted to working in international global context during the workshop. The answers are influenced by how the students of different Novapoint or English language levels have been selected to the workshop. This is something teachers need to keep in mind when, for example, planning how to divide student to groups in the workshop.



Picture: Group 5 (Steffen Larsen, Sannimaija Joutulainen, Jonathan Hoffmann and Anna Frydensbjerg Hansen) ready to solve road design problem in Trondheim workshop 2023.

### 3) Evaluation questionnaire:

In the end of the workshop each student had a possibility to give feedback by answering to questioner send by e-mail. In the questionnaire the students were asked to evaluate knowledge, skills and competencies gained at the workshops. In the Table some answers are collected from Aalborg, Jönköping and Oulu workshops rated from 1 to 5.

**Evaluation of knowledge, skills and competencies gained at the workshop**

	Aalborg	Jönköping	Oulu
I can work as part of a multi-national team	4,71	4,53	4,75
I can work and communicate in English within a road design project/problem	4,65	4,33	4,45
I can collaborate with the other professionals in a design process	4,65	4,07	4,65

In addition, the students were asked to evaluate did they received any important or unique skills during group working, as well as where they will use these skills in future. Based on the feedback students thought that group work was good practice to collaborate with each other and a more effective way to learn Novapoint. Working in an international environment means that communication skills must be sufficient to understand and fulfill the tasks. In the end of the workshop most of the students was found that they have courage to communicate each other during the group working.

### **Conclusions of IO4**

The workshops of the inROAD project were found to be international environment for students to find a Novapoint road design experience and collaborate together specific assignment with a timeline, deadline and demands for concrete solutions in English. For the teachers, the workshops were a perfect moment to exchange knowledge within the didactic areas to the curriculum, to increase their didactics skills as well as supply new material in English.

Based on the experience of the workshops, the following recommendations for actions to implement the goals of the workshop :

- Application form with the information needed to complete the workshop is an effective way to motivate students to international workshop.
- A focus group interview during the workshop is one way to give feedback to teachers is the selected teaching method suitable or not.
- A final evaluation from students is necessary to analyze the workshop and to make all the necessary changes.