Tuesday, 2.2.

The morning started with a presentation by Mr Rielage who is a leading engineer at Bayer Bergkamen, a world famous pharmaceutical company producing chemical solutions in the crop industry, steroids and medical treatments.

Mr Bayer presented some fact about the company, the locations this big factory has and their work fields. Very interesting aspects like how automation is employed in the work process, how sustainability is taken into account and even job perspectives, apprenticeships and internships were mentioned in his presentation.

The students learnt about efficient factory structures with standard production lines and standard programmes some modules of which are adjusted when the production changes. Working with these standard modules enables the company to change economically.

The students had lots of questions about the different work places at Bayer and how robotics come into play. Thus the future of work places with lots of automated systems like robots were dealt with as well.

Mr Auer, as a teacher who is interested in finding internships students from other European countries within the framework or Erasmus+ found especially interesting that Bayer is also taking interns for work placements at their plants. They are generally open to take them when they are already basically skilled and speak German.

Being interviewed by one German student Mr Rielage also explained what he believed were the necessary skills in a worker working in an automated environment like at Bayer Bergkamen.

With these new features like being a responsible person who likes to work precisely and who is not afraid of computers, and characteristics like being prepared to learn from mistakes and not to give up easisly, for instance, the original mind-map of competences that had been created at the beginning could be extended by important points. The extended version was presented after the lunch break. (see etwinning results of the final meeting.)

All in all, the students were impressed by this information and even mentioned that they would be very interested in becoming an engineer and working in industry 4.0.

Before the lunch break a film about safety instructions that had been produced by the Spanish team was presented and the instruction list as well. In the following discussion it became clear that these safety instructions were necessary information to prevent users from treating this electronic device incorrectly and destroying it or just losing the warranty. Furthermore, geographical differences became clear as well such as the fact that in Spain the device has to be protected from intense sunlight while in Norway it could not be used on an icy surface in the winter. Another interesting aspect that only became clear through the international exchange.

After the lunch break, the German team presented their achievements in ICT competences from the beginning to today. Almost in all fields of computer application, may it be finding, organising and using information or using computers to control automated systems, like CAD for drawing and printing 3-D parts or the coding of Arduino. Only using spreadsheets and managing meetings with a computer, had not been done and learnt much by the students. They decided, however, that this would not be necessary in an engineering profession.

The bar charts showing this development, were presented by two refugee students who have taken part in some lessons about the robot development but only irregularly because they were in two other classes than the other students and had different time tables. Their achievements, however, presenting such complex diagrams and independently taking part in such a conference shows that their development in ICT competences has to be praised as well, even if it doesn’t refer so much to programming robots.

So, the aim of the project to enhance computer skills in all students has been reached fully.

The Spanish team came to a similar result in their presentations and the Norwegian team presented a slide show in which the students evaluated their increase in ICT knowledge themselves because they were a new group of students who could not be compared with the original group from 2018 when the project started.

Again, their knowledge and application abilities were regarded as increased enormously (see slide presentation by the Norwegian team in ‘final results’ in etwinning). In this presentation, the overall question how successful and worth repeating such a project was, was answered only positively by the students and teachers (see same slide presentation on etwinning)

Finally, the conference ended with a pro and con discussion among students about online learning and being taught. The teacher teams thought this to be a good question, as now all students have experience with online learning because of Covid-19. While before the project many students expressed their will to be taught online more, now the impressions were much more differentiated, because the cons of being taught online and having to learn on your own, were also explained by the students (see result of pro and con discussion in etwinning ‘results’). Here the advantages but also the limits of ICT in school and learning environments became clear as well – both sides of the medal were discussed.

This was a concluding ending for this day, which dealt with ICT systems at the workplace, at home and at school.