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25th September – 1st October 2022

3rd Erasmus+ meeting – Eutin

**Project title: ENGAGING WAYS TO SCIENCE: EMPOWERING
PROJECT-BASED LEARNING FOR INTERDISCIPLINARY
SCIENCE EDUCATION**

*KA229 – School Exchange Partnerships
Form ID: KA 229 – 6ABF520C*

Due to Covid travel restrictions meetings had to be rescheduled compared to the plans in the original application form.

Nevertheless, by swapping students' activities we have managed to cover the contents of both teachers and students' activities as intended.

Short-term exchanges of groups of pupils: Discover and uncover with Science: Everyday and Nature Phenomena

Short-term joint staff training event: Learning circles for Science Teaching



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3 Summary of Activities

3.1 Sunday, 25th September

Arrival of participants

Students meeting host families

Teachers: Welcome dinner

3.2 Monday, 26th September

The meeting was opened by Mrs Tanja Dietrich, headmistress of Johann-Heinrich-Voß-School who expressed her appreciation and support for the Erasmus+ - project. Also, the Representative of the City Council of Eutin, Mr Dieter Holst, welcomed the participants and wished for good cooperation and success.

After this, students participated in small international groups in a guided tour of the Voß-School organised by their German partners; teachers were also led through the school and esp. the science departments, different approaches and equipment were discussed on the way.

Students then took part in their first workshop (warming up to their task): They were divided into four international teams and confronted with the instructions (cf appendix) concerning the boxes which had been prepared according to the decisions of the teachers reached in Budapest (cf appendix). They were given time to come up with first ideas and to discuss with their partners. Teachers also looked at the boxes and offered some guidance.

Then the teachers took part in workshop I, discussing basic guidelines of learning circles in principle and a compilation of cooperative learning methods gathered by the German coordinator A. Szellinski.

After the lunch break the students discovered Eutin in smaller international groups (again different from the ones in the morning to mix them) by doing the "Voß-Eutin-Rallye" designed by A. Szel-linski, the teachers more or less following the students' ways.

In the evening teachers came together again to attend workshop II, a teambuilding activity, and cooked together.

3.3 Tuesday, 27th September

In the morning the students worked on their boxes, supervised by teachers of JHVS.

The international teachers took part in workshop III, conducted by Karl-Martin Ricker, Director of studies and Consultant of natural sciences in the Institute for the Development of Quality at Schools in Schleswig-Holstein, concentrating on "Cognitive Activation". Teachers were working in groups and conducted small scientific experiments by using a developed form of the placemat-activity.

After that teachers had a look at the students working again, coordinators discussed plans for the next meeting in Lithuania (cf. end of minutes).

After the lunchbreak and the announcement of the winners of the rally the programme had to be changed due to bad weather, so the students did not take part in sports activities but stayed together at school and played some teambuilding games, supervised by an arts teacher of J-H-V-S, K. Wiemer.

Teachers could not go on a guided tour through the Eutin "Küchengarten" but did an Eutin castle tour instead.

3.4 Wednesday, 28th September

The whole-day bustrip for students and teachers was designed around the topic of everyday natural-scientific phenomena and started near Husum with a very special habitat, the unique mudflats (UNESCO world natural heritage), where teachers and students enjoyed a guided tour, mostly bare-footed. Then the group went on to Flensburg, where the “Phänomenta” (an interactive science museum) was visited and the city centre was explored.

3.5 Thursday, 29th September

In the morning, students worked on their projects/boxes.

For the teachers, Professor Dr. Volkmar Helbig from Kiel University gave a lecture on hydrogen and its possible uses to solve our energy crisis, followed by a short discussion.

All the teachers then discussed plans and tasks for the meeting in Lithuania (cf. end of minutes).

In the afternoon, teachers and students travelled to Lübeck ((UNESCO world cultural heritage) and discovered the city centre in small groups with the help of “Key Zone city games”, where you have to solve a lot of (mathematical, logical)riddles and have to be very attentive towards your surroundings.

3.6 Friday, 30th September

In the morning, students had some time to finish and prepare their presentations, teachers then joined in to watch these:

Group 1 (Leonor, Nele, Kristof, Justus, Timon, Julius) dealt with Water Streams

Group 2 (Charlotte, Ben, Titus, Ines, Matas, Mate) with Resistors and Solar Panels

Group 3 (Reka, Elinga, Tarja, Jan, Constantin, Joao) with Energy

Group 4 (Alina, Anna, Arne, Eszter, Margarida, Agniete) with Bungee Jumping

cf. movie of presentations.

After a short break the group then met again and filled in some evaluation sheets, some results can be found at the end of these minutes.

Before the official closing of the conference, each participant was called up and handed over her/ his “Certificate of Attendance”.

1.7 Saturday, 1st October

Departure of participants, meeting of host families, saying goodbye.

4 Plans/agreements for the next meeting

- *The next meeting will be held in Pakruojis, Lithuania from 27th November – 3rd December 2022.*
- *The topic for the pupils will be “Learning Circles”, activities will be based on this. At home, they will be given articles which have got something to do with natural sciences – this can be an article about hydrogen, biographies of scientists, excerpts from novels etc and then have to prepare a presentation of about 10-15 minutes. Portugal will use this as a method to choose participants.*

In a second step, Lithuania will give them a kind of homework, i.e. Lithuania will choose and send articles the pupils then will have to work on at home. They need to be experts on “their” articles as they are going to share their knowledge with their partners in Lithuania – but they do not have to prepare a presentation.

The Lithuanians already have very clear conceptions about the topic they are going to focus on as the “father of electrolysis”, Theodor Grotthuss, worked and lived near Pakruojis.

- The topic of the teachers' training will be "assessment techniques", some experts will be invited, but teachers also get some homework:

They will have to prepare a presentation on assessment techniques that should last about 30 minutes; this should include examples of tasks (also our mini-projects from the first round, but in general it should discuss project-based, interdisciplinary work) and how we evaluate it (also for example "snowflake", google forms etc). The aim is to share good practices how to assess and to improve assessment techniques.

- It was agreed that Germany will take over half of the costs for the e-book that Hungary is to produce.

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6 Evaluation of this meeting

The evaluation questionnaires (slightly different for pupils and teachers) were answered by 10 teachers and 24 pupils. Here mainly the answers to questions concerning the scientific tasks and professional abilities are dealt with, not the more general questions about learning things in a foreign country and being together in international groups.

Both groups agreed that in general they really liked the idea of the boxes and enjoyed the creativity and working experience but also both groups would have wished for a bit more of guidance.

Some quotations:

Question: What did you like about the „boxes-task“:

a. Teachers: „The boxes allowed me to see what I do not have to do as a teacher“, „...that they worked together and shared their ideas“; „... the methodology behind it (group work)“, „ the project-based learning and the student-centred activity“; „ The freedom given to students to allow creativity“

b. Students: „ I liked it that the tasks weren't given to us and we could come up with an idea ourselves“, „the multi-facility of the possibilities“; „I loved how we could work independent and I enjoyed how we worked in international groups to create sth.“; „variety of the inventory, limitlessness, working in a group“; „I loved it, although sometimes we had to face challenges but it turned out to be very fun. A lot of thinking“; „I like it that we had a chance to use our creativity to do a science project.“

Asked to suggest one improvement, teachers answered: „The theme should be on the boxes (4x) and the number of items should be reduced“; „clearer instructions, more teachers around“; „the time should be given.“

Students answered for example: „ Clearer themes of the boxes“, „ more help from teachers“, „ Task was a bit too open which made it hard but it was okay“ (10), some of them were not always satisfied with their group work (7).

Asked what they had learnt with regard to the sciences one student answered: „ I love physics“; other answers: „Creating something“, „That science is everywhere“; „ synergy of the subjects“; „That it also can be fun and cool“; „ I learnt to speak about sciences in English“; „ to build the models yourself“; „ It was the reality and the daily-based thinking which I liked.“

A majority of teachers liked the activities in which they worked in groups most, from a professional point of view most of them liked to be reminded of different cooperative learning methods: „ I learned a new way to explore some science methodology in the classroom“; „ the Cognitive Activation approach“; „I liked the placemat method“.

Students also pointed out that they learnt a lot about each others' countries and had improved their language skills. With regard to sciences, most of them claimed to have learnt a lot, even if it was only a fresh awareness of natural – scientific phenomenons or technical terms.

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8 **Annex**

9 **List of Participants of the Erasmus+ - Scientific conference**

10 **held in Eutin, 25th Sept – 1st Oct, 2022**

Johann-Heinrich-Voß-Schule, Eutin

Students:

Gebhardt, Ben

Gebhardt, Jan

Hoffmann, Nele

Mannitz, Constantin

Nedderhoff, Arne

Priebe, Anna

Richter, Titus

Rißmann, Tarja

Rose, Alina

Severin, Timon

Warringsholz, Justus

Witt, Charlotte

Teachers:

Blunck, Sylvia

König, Petra

Raschpichler, Christopher

Steffens, Birgit

Szellinski, Alheid

Pakruojis Atžalynas Gymnasium

Students:

Gendvilaite, Elinga

Kapucinskaite, Agniete

Sapoka, Julius

Simanskis, Matas

Teachers:

Augustinaitiene, Rasa

Leimontiene, Rima

Stravinskiene, Rasa

Agrupamento de Escola Daniel Sampaio

Students:

Afonso, Leonor

Arcangelo, Ines

Claudino, Margarida

Neto, Joao

Teachers:

Paiva, Paula

Rebelo, Fernando

Santos, Cristina

Vaz, Carla

Jedlik Anyos Gimnazium

Students:

Balasz, Eszter

Fabian, Reka

Pesti, Mate

Peto, Kristof

Teachers:

Kohut, Judit

Zaha, Enikő