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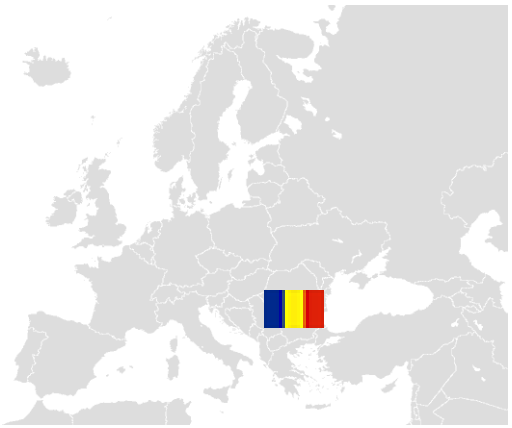
Collection of Students' and Teachers' Experiences In Romania



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COLLECTION OF STUDENTS' AND TEACHERS' EXPERIENCES IN ROMANIA

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Introduction

The aim of this task was to involve teachers and their students in describing their experiences regarding the main obstacles and most effective solutions to overcome them that affect the interest of pupils for scientific issues: reasons for their achievement.
For this purpose, the methodology adopted was based in working groups meetings with the teachers and students for discussions on:

- For the teachers – on their experiences and efforts to adopt teaching methods to promote the interest of students towards scientific issues and to make their pupils autonomous in their learning process
- For the students – on their difficulties in learning sciences and their successes, by highlighting at least one topic that they feel they have learnt well, explaining the reasons for their achievement

We considered that adopting this strategy, teachers will understand exactly what they need to do within the project (at least at this stage), will feel supported and will be involved in extracurricular activities for continuous development of their professional competences. Also getting the students involved in group activities, we considered that they will be more engaged in discussing about their difficulties and how they learn to overcome these issues.

Recruiting of the Portal users

The target group addressed was formed from 8 schools from 2 counties from Romania (schools level - Primary Schools, Lower Secondary School and Upper Secondary School) with 35 teachers (Math, Nature studies, English – CLIL, Physics, Chemistry, Biology, Informatics, Technical disciplines, Geography, Social Sciences – Logic, History and 1 school counselor) and around 363 students.

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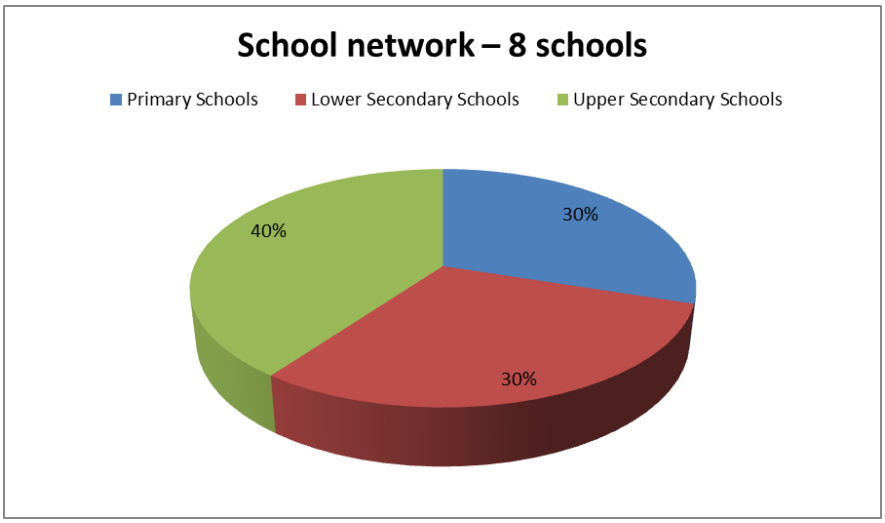

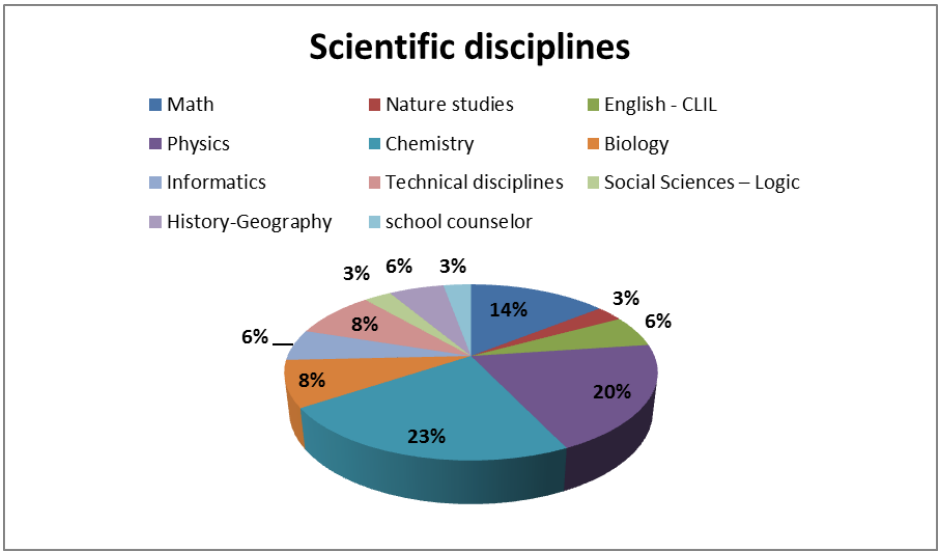

The strategy to involve this target group was based on establishing contacts with the school principals and scientific teachers and organization of direct or indirect activities (meetings, emails, telephones,) for presenting the project, aims, activities, educational materials from the previous Goerudio project, and discussions about the teachers/students role. Also the teachers get involved in the project based on their interest in the project field and the possibility to find out about and have access to innovative and attractive methodologies for teaching sciences.

As self-evaluation of the recruiting strategy, we can affirm that it was consistent with the aims of the task, we managed even to exceeded the proposed number of target groups to be involved by each partner (at least 5 schools, 10 scientific teachers, 200 students), by involving 8 schools, 35 teachers and 363 students.

The results obtained were mentioned above.

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Collection of teachers' and students' experiences

EuroEd staff conducted the following steps for the collection of teachers' and students' experiences related to teaching and learning scientific subjects:

- Translation of the Annex 09 - WP1.D - Teachers experience form & Annex 10 - WP1.E - Students experience form, into Romanian.
- Announcements to the teachers involved presenting the Action 2 of the project, including the presentation of the aims of the experiences sharing, discussions on the type of experiences to be presented and introduction to the forms to be filled in.
- Participation in meetings with the teachers, working and supporting them to fill in the forms and discussions among the teachers on their experiences.
- Participation in activities with the students, presenting the project and working with them on sharing their experiences.
- Email support to the teachers and students in filling in the forms.
- Collecting the forms from the teachers (electronic and on paper versions).
- Working on checking the experiences received, especially those from the students – proper and adequate content.
- Translation on the content – from RO to EN and those received in EN were translated also in RO.
- Working on editing the content, uploading the experiences on the portal.

At this stage the EuroEd staff considered that there is no need to organize workshops within the project. We planned the workshops for the presentation of the experiences and initiatives collected with the aim to set the Learning Community and for collecting ideas for development of educational models for making the process of teaching/learning scientific disciplines more easily.

To support the collection of teachers' and students' experiences related to teaching and learning scientific subjects we used 2 strategies (direct and indirect activities):

1. Indirect activities – electronic/telephone contact
   Within these activities we were involved in sending emails to the teachers and students presenting the task under Action 2, presenting to them the aim of the activity, what the project would like to collect, and presentation of the forms to be filled in. During the entire period allocated for this task, permanent support was offered, remainder emails, phone conversations explaining aspects related to the forms.
2. Direct activities - meetings
   To support the teachers in filling in the forms we considered that is more efficient to organize meetings in some of the schools involved in the project, with the teachers. The schedule of the meetings was based on presentation of the project, presentation of the WP1: Teaching and learning experiences, Action 2 aims, tasks and results to be obtained, discussions on teachers experiences and efforts to adopt teaching methods to promote the interest of students towards scientific issues and to make their pupils autonomous in their learning process, presentation of examples of good practices, presentation of the form (Annex 09 - WP1.D - Teachers experience form) and invitation to fill in, presentation and discussions on the ways of collecting the experiences also from the students and presentation of the form for students (Annex 10 - WP1.E - Students experience form).

Results: 4 meetings have been organized with participation of 15 teachers.

To support the teachers and the students to discuss and share their experiences related on their difficulties in learning sciences and their successes, by highlighting at least one topic that they feel they have learnt well, explaining the reasons for their achievement, we organized meetings in classes. During the meetings, EuroEd staff presented the project and its aims, involved the students in

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discussions related to the difficulties and ways of learning scientific disciplines and supported them in filling in the forms.
Results: 7 meetings have been organized
As total results: a number of 56 teachers' experiences and 116 students' experiences were uploaded on the project portal.

Conclusion

The impact of the meetings was great. Not only in terms of time and efficiency, but also the number of the experiences collected was higher. The teachers and students felt more confident and understood better what they have to do. This was a great opportunity for the teachers and students to interact and to discuss about the difficulties encountered and the ways they overcome them. Having the meetings we were able to discuss about the issues raised by the project and also to collect experiences.
Due to the short period allocated for the collection of the experiences we weren't able to organize meetings in all the schools involved in the project. The communication with them was mainly by email and telephone. But we observed a difference between the two strategies, in terms of results – experiences collected and their quality.
In what concerns the experiences shared by the teachers, most of them are about the Chemistry, Physics, Biology, Math classes. Teachers were willing to discuss about their experiences and efforts to adopt teaching methods to promote the interest of students towards scientific issues and to make their pupils autonomous in their learning process. All of them agreed that the scientific disciplines are a weak point for the students. Most of them are not very interested on these disciplines and this is visible through the lower grades received.
To be able to respond to the needs of the students and to attract them to get involved in the scientific disciplines, most of the teachers make use of different methods. Most of them agreed that experiments and the lessons in laboratory can improve and attract the learning process. Unfortunately the curriculum is too overcrowded, and the balance between theory and practice is in the favour of theory. Teachers do not have enough time to spend in the laboratory for the experimental part. And also a very raised issue is that most of the schools have only one laboratory for many teachers and also is not very well equipped.
The communication is also essential in the learning process when it comes to teaching science. As teachers they have to find and use a language which students to understand. If it is too abstract the students will get lost, from the very beginning; that is why teachers should always start with things students know and build from there.
Teachers are using also different methods like technologies, games, objects, former students to be presented as examples of good practices, to raise the students' interest in science.
Testimonials from the experiences:
Experiments engage students in the activities. They provide excellent opportunities for learning by doing.
We used technology to promote students' understanding of geometry. This offers a more dynamic approach of geometry (as opposed to the paper one which is static.
Assigning students classroom tasks is a great way to build a community and to give students a sense of motivation. Most students will see classroom tasks as a privilege rather than a burden and will work hard to ensure that they are meeting your expectations. It can also be useful to allow students to take turns leading activities/ experiments.
Science lessons can be accessible if students are engaged to work in teams.
I learned chemistry in the laboratory because chemistry it is an experimental subject. What can be more stimulating and more motivating for a student than carrying out a laboratory experiment? Chemistry opens doors to our innate curiosity and also provides us with answers.

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As a teacher I have tried to communicate the excitement and wonder of the subject I teach and I am interested in to my students so that they will want to take it further. It is a matter of communication: as a teacher you have to share your enthusiasm for your subject with your students in a simple way so that they will understand it.
Simple experiments speak volumes and most of the times are more important than pages of abstract theory in terms of raising students' motivation to learn chemistry.
Communication is essential when it comes to teaching science. As teachers we have to find and use a language our students understand. If it is too abstract we will lose them from the very beginning; that is why we should always start with things they know and build from there.
I have always believed in the power of learning by doing. That is why I use experiments in teaching my students. Everything becomes observable, visible and clear. They also engage students who are willing to participate and achieve the objectives of their tasks.
Teaching Maths wasn't always my favourite thing to do, but since I've got no choice I tried to make it as simple as any child could understand it. For instance I use a lot of images, cards, toys,
The most frequent difficulty I have to face is not being able to do the classes in the lab. There is only one laboratory in the school and we are four teachers. It is true that sometimes the experiments are simple and can be done in a common classroom but the laboratory represents a different setting suitable for experiments, where sometimes teachers feel like a magician.
I have tried to raise my students' interest in science by inviting former students who have chosen science as their careers. Students recognised that access to practising scientists and engineers would increase their interest and enthusiasm, as well as provide valuable information on careers and studies.
In what concerns the experiences shared by the students these are from the field of Chemistry, Biology, ICT, Math, Physics, Economics, Technical disciplines, Nature science, etc. As general remarks, students appreciate the methods used by the teachers in transferring the information; some of them are learning to practice in the future in the field; science is most of the time interesting because is about them, or about the things happened around them; most of them appreciate the experiments they do in the laboratory, but they consider that is a pity that they do not have enough time to practice more, unfortunately they have a lot of concepts and formulas to understand and work with, and most of the classes are based on theory and problems solving; some of the students are not into science, they find it too abstract and hard to be understood, but in the same time they agree that this is because they are not interested in the subject and that they will not use the scientific competences in the future;
As methods of learning, most of them appreciate the experiments and the practice; some of them are using the computer and the internet as a supplement for the things learned at class; some of them, as a passion, are watching shows and films of scientific programmes on TV; some of them to be able to remember the formulas are memorizing by hard, even if they agree that this is not a solution, because if they don't understand and only memorize, in time these knowledge will get lost; group working.
Testimonials from the experiences:
I love biology because I consider necessary to know both things that surround us, and our bodies. It is important to know the physical construction, to know human body organs and what functions they perform.
I have noticed that most students complain about science as being too hard and too abstract but nobody complains about experiments.
Experiments are fun, appealing and they all stir our imagination and curiosity.
I like biology and chemistry. I love biology because I want to follow the medicine university, and for sure I would need it. But also because seems to be very interesting. I consider that learning biology is an advantage.
I am not into science but I like experiments.

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Most my colleagues complain about geometry. It is hard and very abstract. They are right; what they need to do is to visualize geometrical structures.
Computer has helped us visualize abstract geometrical concepts. There are three D programmes which enable us to see the geometrical constructions.
I encountered difficulties in mathematics, because the curriculum is overcrowded, and the teacher did not explain clearly. I also do not express an interest in this subject.
During the three years of high-school that I have graduated so far, I have made personally only two or three actual experiments at chemistry and physics. I think this should be done way more often to consolidate our knowledge that was accumulated in 3 years.
I am really disappointed about the Romanian Education System mainly because we study too much and use all the information too little.
I hated memorizing things for school because I have found out that I don't remember them after a while, especially if they are abstract and I can't relate them to anything real around me.
Personal factors that led to obtain good results in real disciplines (chemistry, biology) are my interest in these subjects, involvement in solving exercises in class and homework, working with colleagues on projects. All this was due to the understandable explanations received from our teachers and due to the interesting classes.

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