Associació L'Alqueria Projectes Educatius

Goerudio

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Collection of Students' and Teachers' Experiences In Spain

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Lifelong Learning Programme

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COLLECTION OF STUDENTS' AND TEACHERS' EXPERIENCES IN SPAIN

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Introduction

One of the expected results of the project is the collection of experiences related to science education. The experiences should describe the main difficulties and solutions found for teaching or learning science at school from two different views: teachers' view and students' view. For this, two different forms adapted to teachers and students respectively were created. The forms have been translated into Spanish to make this task easier for teachers and students

In order to achieve this goal, previously, 5 schools in the Valencian Community were involved in the project which became part of the network of schools in the project. The project was presented in meetings with teachers at schools to involve the teachers concerned and to explain the project activities they had to perform. The teachers supported by l'Alqueria have done the activities with their students.

During the development of the activities, continuous contact has been maintained with teachers to monitor the evolution of them.

Recruiting of the Portal users

The 5 selected schools are Public Secondary Schools. In Spain, Public Secondary Schools include both Lower Secondary School and Upper Secondary School. The schools were selected for the willingness of teachers to Goerudio project.

To select the schools, l'Alqueria met with headmasters of 8 Secondary Schools and organized meetings with the science teachers of the schools to present Goerudio project. A dossier on the objectives and activities of the project was sent to interested teachers by e-mail.

The overall response was very positive. The main obstacle encountered by teachers was that the activities were in English. Many of the Spanish teachers do not have the English skills to perform activities. L'Alqueria helped teachers with translations of their experiences and collaborated with them in the collection of students' experiences.

In total, over 200 students and 36 science teachers participated in the project by sharing their experiences. The graph below shows the thematic areas of the participating teachers.

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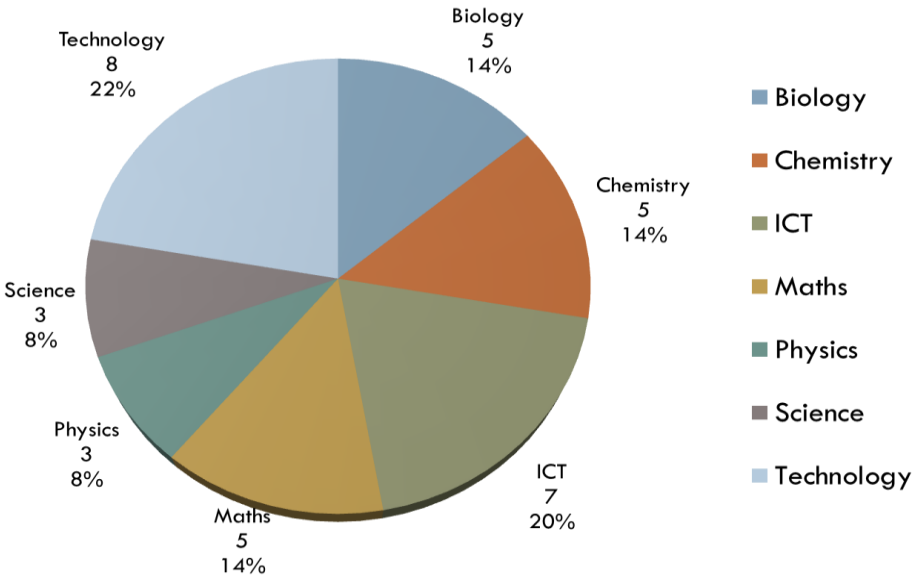

Collection of teachers' and students' experiences

To collect teachers' and students' experiences, L'Alqueria performed the following tasks:

- Translation of forms, Teachers' Experience Form and Students' Experience Form, into Spanish.
- Spanish translation of the project brochure.
- Presentation Goerudio project in secondary schools: meeting with headmaster and project presentation to science teachers.
- Direct and e-mail contact with teachers interested in the project. Submission of information on project activities and resolving doubts.
- Selection of schools to be part of the project network of schools.
- Support teachers through meetings and e-mails to fill it in (Teachers' Experiences Form)
- Participation in meetings with students to introduce the project and supporting them to fill in Students' Experience Form.
- Collecting the forms from the teachers and the students.
- Review of the experiences.
- Spanish to English translation of the experiences.
- Editing the content, uploading the experiences on the portal.

Conclusion

Collected experiences show the interest of teachers to motivate students in science learning. Teachers try a variety of activities in which students have to participate to keep their attention and motivation. Although teachers did not reflected it explicitly in all experiences, in meetings with teachers for project activities, most teachers agreed that one of the main problems in education is the lack of student motivation and attention. The solutions adopted by the teachers are mostly direct activities requiring student participation so that students learn through their experience. Another commonality of

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teachers' experiences is that the issues are usually close to real life in order to facilitate understanding of the problem and to arouse the curiosity of the student. It is noteworthy that, in Valencia, virtually all technology teachers work with the project-based methodology. The teachers' experiences presented different ways of teaching scientific subjects, through games or computer games, laboratory work, factories or other facilities outside the classroom, applying computer programmes and applications to facilitate the education, different kinds of competitions involving students.

The following trouble making factors were detected in teachers' experiences:

- Incomprehension of the processes and the texts (23 indications)
- Lack of attention (17 indications)
- Variety of students (4 indications)
- Lack of basic and consecutive knowledge (5 indications)
- Old study and visual materials (1 indication)
- Lack of autonomy (4 indications)
- High ratio of students (3 indications)
- Abstraction difficulties (2 indications)
- Difficulties in applying theoretical knowledge (2 indications)

The solutions adopted by the teachers were:

- Work in groups (19 indications)
- Research (12 indications)
- Laboratory work (17 indications)
- Practical work (17 indications)
- Application of technical means (12 indications)
- Presentations (6 indications)
- Work in nature (5 indications)
- Taking part in working out study materials (1 indication)
- Application of research projects (8 indications)
- Using the links with the real life (17 indications)
- Games and competitions (7 indications)

Most students' experiences are experiences of success. Although there are many students with learning problems in science, students overwhelmingly preferred share success experiences for them. These experiences were related to laboratory work or extracurricular activities. Students prefer activities where they can experience and see things for themselves.

Regarding students' experiences of difficulty, the cause was often a lack of understanding of theoretical concepts and difficulty solving problems. The experiences of difficulty occured primarily in in Maths which is the area that requires greater capacity for abstraction.

Spanish students' experiences show the following trouble making factors:

- It is difficult to remember the theory in order to do larger papers than tests (consummation of time to achieve the aim) (8 indications)
- During note taking it is difficult to understand what notes we are taking - without comprehension, dictated by the teacher or from Power point presentations (10 indications)
- During the lessons we have difficulties understanding the rules and regulations (12 indications)
- It is difficult to understand and to remember the terms (1 indications)
- Difficulties solving problems. (1 indications)

The success experiences show the following factors of success:

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- More laboratory work in order to connect the theory with practice (35 indications)
- The theory is complemented by a practical part (experiments, touching the object with your own hands, etc.) (40 indications)
- Examples from the nature are obligatory (6 indications)
- Visualizing the theoretical concepts through animations (11 indications)
- Examples from the real life (16 indications)
- Interactive games or activities (9 indications)
- Games and competitions (13 indications)
- Work in groups (15 indications)

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