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Collection of Students' and Teachers' Experiences In Italy



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COLLECTION OF STUDENTS' AND TEACHERS' EXPERIENCES IN ITALY

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Introduction

The methodology adopted for the collection of teachers' and students' experiences related to teaching and learning scientific subjects mainly consisted in contacting them through telephone and e-mails. It was also very important the collaboration with the USR Toscana (Regional Education Office for Tuscany).

After their participation in the Goerudio Workshop on 16th April 2014, directed by Laura Capelli, professional of teachers training of USR Liguria, teachers were informed about the kind of information they could use to fill in the forms of the experiences. After that event, they sent us their experiences. We stayed in contact with them, by telephone and e-mail, to help them find the best way to describe their experiences, which were very interesting and which can be inspiration of best practices to be adopted for the teaching of scientific subjects and to increase the interest and the motivation of students at school, when the pupils study the subjects considered as the most difficult by their majority (Maths, Physics and Chemistry).

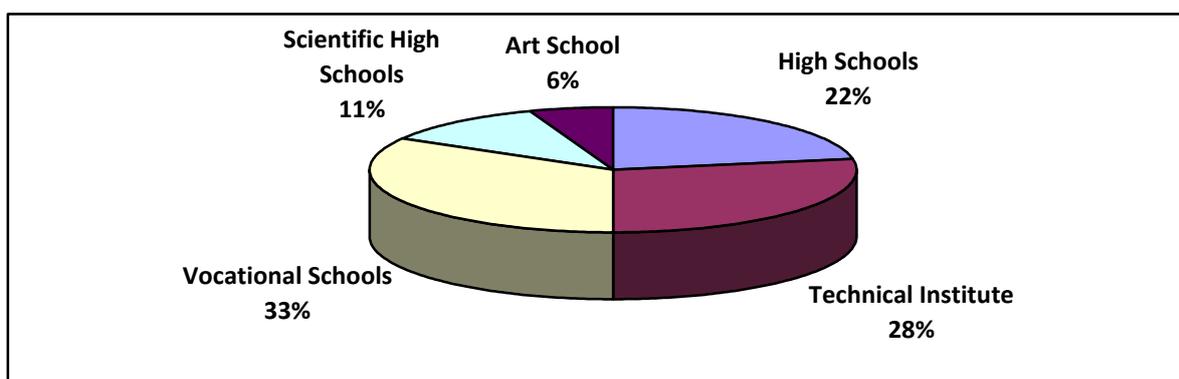
Recruiting of the Portal users

The target group we addressed was composed by high-school teachers.

The recruiting strategy used consisted in sending e-mails and contacts by telephone. It was also important the cooperation with CIPAT (Consortium of the Tuscan Vocational Associated Institutes) and with the USR Toscana (Regional Education Office for Tuscany). Both organisations sent a direct email to the schools in Tuscany inviting them to join the project.

As self-evaluation of the recruiting strategy, we can affirm that it has been efficient, but the feedback from teachers was weak in proportion to the time dedicated to make them participate in the project.

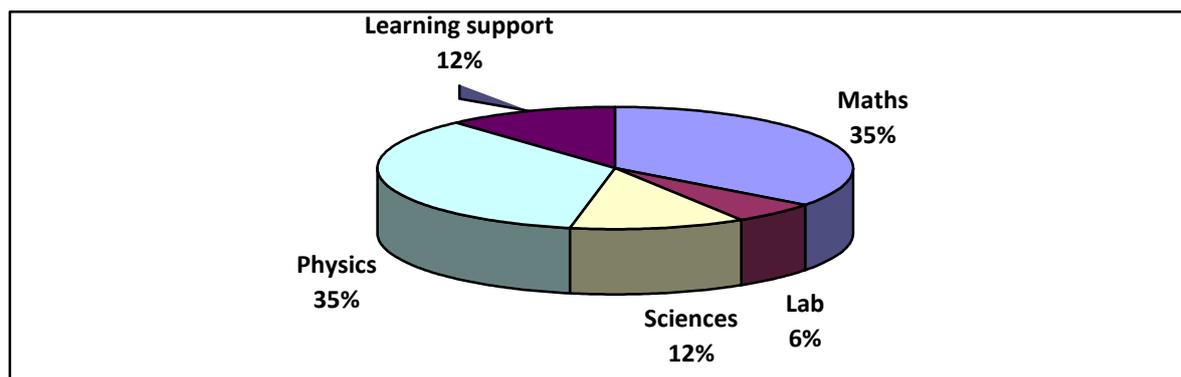
As far as the results of the recruiting are concerned, 9 schools were involved, many of them include different education paths within them (4 high schools, 5 technical institutes, 6 vocational schools, 2 scientific high schools, 1 art high school).



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In relation to the teachers participating, we have 3 of Chemistry, 6 of Maths and Physics, 3 of Maths, 2 of Sciences, 1 of Laboratory and 2 Learning support scientific teachers.



The students involved are 366.

Collection of teachers' and students' experiences

The collection of experiences took place before, during and after the workshop organised in Pixel premises on 16th April 2014. Total number of 55 teachers' experiences and 14 students' experiences were collected achieving and exceeding the expected result.

In order to help the teachers and the students in the description of the experiences, all forms were translated in Italian.

Teachers were asked to provide us with the experiences before the workshop, as their experiences were showed and discussed during this event.

The workshop was attended by 12 participants and was guided by Laura Capelli, a teacher trainer from the USR Liguria (Regional Education Office for Liguria). Teachers were informed about the state of art of the project and about the future project activities. They were very interested in the project and they participated in an active and productive way, talking about their experiences in teaching scientific subjects.

As far as the contact method is concerned, the main strategy adopted was to send e-mails to the teachers, calling them by telephone or using Skype. Many experiences were sent directly in Italian and Pixel took care of the translation into English.

A deep analysis of the experiences uploaded by teachers and students allowed the identification of the following common factors:

Teachers' Trouble Making Factors

- Difficulty in abstract thinking
- Incomprehension of the process and the texts
- Hardness of the subject
- Difficulty in cross-disciplinary approach
- Mnemonic approach
- Lack of basic and consecutive knowledge



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- Variety of students
- Lack of interest
- Lack of attention
- Inadequate diligence

Solutions adopted by the teachers

- Laboratory work
- Practical work
- Use of ICT
- Work in groups
- Use of a practical approach
- Using the links with the real life
- Use of cross-disciplinary approach
- Taking part in working out study materials
- Research
- Practical work - Laboratory work

Students' Trouble Making Factors

- It is difficult to understand
- Lack of basic knowledge
- Wrong teaching method
- Hardness of the subject
- Too much use of ICT
- Theoretical approach of the teaching
- Lack of interest
- Lack of attention
- It is difficult to understand
- Incomprehension of the processes and the texts
- Too much formulas to memorised
- Mnemonic approach in learning
- Lack of practical exercises
- It is difficult to put in practice the theory
- Not enough time spent for teaching the subject
- Difficulty in abstract thinking
- Bad marks

Students' Wishes

- Study with diligence and perseverance
- Improve marks
- Using the link with the real life
- Turn in a less mnemonic approach
- More practical approach
- More laboratory in order to connect the theory with the practice
- More exercises
- Deepen the subject



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Conclusion

The main strategy adopted to collect teachers' and students' experiences consisted in trying to contact professors by phone and e-mails, calling their schools. The problem at the beginning was that we did not have a direct contact with teachers and we had to call the schools, trying to find someone who could be interested in the project. This step was often difficult and worked slowly. On the contrary, when we established a direct contact with the professors interested, we had the possibility to call them on their mobile phones and this facilitate very much this phase. Our collaboration with USR Toscana has been significant and has made our role to assume a more institutional character.

In this way it was faster and easier to talk with them about the experiences and the other tasks they were asked to do in the framework of the Goerudio project, explaining them in details the structure of the document they should have produced and how to set information in the most relevant way for the project, giving importance to certain aspects rather than others.

Teachers' experiences showed very interesting ways of teaching scientific subjects (Chemistry, Maths, Physics, Sciences, Laboratory), through games that implied change of roles and perspective between teacher and students, that proposed new methodologies to stimulate students in the learning of these subjects, facilitating their work through the proposal of a different setting concerning the subject they had to study.

The majority of the students' experiences showed difficulties in managing problems (both in Maths and in Physics), as many students did not even know what the text meant and did not manage to find the process through which work and solve the problem.

On the contrary, they found less difficulties with the expression and equations; whenever they had problems with them, mainly due to the change of programs from lower class to higher ones, through some bigger personal efforts in the study of the topic, and with more exercising, most of them managed to keep up with the higher level of difficulty of the exercises they dealt with, regaining their self-confidence about the subjects.

Non-traditional approach, or even only a bigger number of experiments and practical lessons, made students closer to the subjects, removing the sensation of fear and distance they felt towards Maths and Physics, often perceived as a mere and abstracted set of formulas to memorize, without understanding their meaning.



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