



ITEC

Designing the future
classroom

Case study story Portugal

Pilot cycle 3: September – December 2012

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CASE STUDY STORY: PORTUGAL

The Learning Story

Visualising the Planet Surface

The teacher

The teacher had also participated in the second iTEC cycle. She describes herself as being, “very open to innovation” and tries to use technology as much as possible.

The class

- **Age of students:** 13-16 years
- **Number in class:** 17

The lesson/s

- **The subject:** Natural Sciences
- **Aims/Objectives:**
 - To raise awareness of the surrounding natural world and develop a sense of wonder, enthusiasm and focus on science;
 - To analyse, interpret and assess evidence collected either directly, or from secondary sources;
 - To plan and execute work or projects that require the involvement of different scientific fields, which are traditionally separated.
- **Over what period of time?** 34.5 hours: 16.5 hours in the computer suite + 18 hours homework
- **Location of lessons?** In the computer suite, outside the school in the local environment, plus homework and out of class support (including online support)

Resources

iTEC: TeamUp

Other technology/software:

[Moodle](#)
KML

[Google Earth](#)
Webcam

GPS
[Dropbox](#)

[Google Maps](#)

This case study provides evidence of

- Creativity
- Constructivist pedagogies
- Use of new learning spaces
- Effective use of digital tools
- Engagement of a wider range to stakeholders
- Social/collaborative learning
- Expressiveness

What happened? Teacher and student experiences

The project required students to georeference three tracks in the local area. The class was divided into three groups of 5-6 students.

- **Research/Observation:** Following the initial preparation for the project. The students and teacher went on fieldtrips where they were joined by members of the community, for example, a representative of the parish council and an engineer. These external stakeholders offered advice and suggestions, and helped to place the learning in a real-life context. During the field trips, students gathered information through a variety of methods (eg notes, photos, georeferencing).
- **Prototype design:** The students used Google Earth and associated tools to plot geo-referenced tracks.
- **Participatory Design Workshop:** As in the research/observation stage, members of the local community were key to the workshop. This fits with the school's aim of working closely with the local community. Following feedback from the participatory design workshop, students made changes to their prototypes.
- **Reflection:** Throughout the project, students were guided by a weekly checklist which, "gives them a sense of what they must do and the relevant deadlines, and a sense of process" (Teacher) and they recorded their progress each week on a blog.
- The end product will be disseminated in the school and community through blogs, the school webpage and the stakeholders.

Teacher's comments (+/-)

- **On extending learning beyond the classroom:** "Sometimes we teach, but knowledge seems watertight, it is separated in boxes. No, they had a holistic idea that everything is related and knowledge is not retained here, it goes

beyond the walls of the classroom. I think this is where we can measure success.”

- **Impact on student creativity:** “The chance to contact with new things and to put their ideas into practice, because they can also be creative here. They can and should have the chance. Some are not creative, because they are not given the chance, and others aren't because they lack the motivation. To be creative, autonomous, I think is essential.”

Main enablers

- **Enthusiasm of the teacher:** The teacher was highly enthusiastic about iTEC, the Learning Story approach and especially the use of new technologies, “I am always on the lookout, I'm always waiting for more. And hope to have the time and opportunity to embrace and explore them suitably. And if possible in the context of enhancing my action with the students and that they may take advantage of it.”
- **Class size:** Classes in this school are small, making the management of groups and provision of sufficient technology less of a problem than in some larger schools.
- **Curriculum fit:** The Learning Story allowed the teacher to cover the topics required under the science curriculum, “So this is what happened. With this Learning Story, and without them noticing, we addressed all of the topics, from the ecosystem, abiotic factors, sustainability, human intervention in ecosystems, natural resources. Somehow, we ended up discussing this.” (Teacher)

Students' comments (+/-)

- **On the practical nature of iTEC:** “Maybe if we had more of these practical lessons, maybe those students could become more interested and put more effort into it.”
- **On the importance of using technology in school:** “Mainly mastering technology, since iTEC is the classroom of the future, in the future all will be about technology and so we will be ready for what's coming. I think it was very good.”

Key innovation/s... What is new/different overall ?

- **Changing role of the teacher:** The teacher describes how students took greater responsibility for their own learning and, as a consequence, her role shifted to that of a fellow learner/explorer: “iTEC allows them to also take the

initiative of searching for the knowledge, researching, using Google Earth. I told them, «I am learning with you, so let's research, let's all search»”

- **Changes to assessment:** Although the process of assessment did not alter, the components of learning which the teacher was able to assess did change: “...it allowed me to assess some things which are not always easy to measure in a normal class. For example, autonomy, creativity, critical thinking...”.

Links

- Teacher and students' blog: <http://itecsaboia.blogspot.pt/>
- School website: <http://www.ebi-saboia.rcts.pt/>
- Facebook pages: <http://www.facebook.com/pages/Agrupamento-de-Escolas-de-Saboia/121140991237020>)
- Mira Clara Group's blog: <http://projectorios-miraclara.blogspot.pt/> (a local group of environmentalists)