THE ISLAND OF BERLENGA*
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The use of Internet as an educational tool has been encouraged in Portugal since the mid-90s. Different governmental programs supporting schools, teachers and students in the use of this network have been launched throughout this period. However, in spite of the progressive improvement of both the Internet accessibility in most K-12 schools and teachers’ training in the use of the technology, its effective implementation in schools is still far from satisfactory at present.

 Teachers point out several reasons related to the Internet itself, such as the lack of websites in Portuguese with resources matching K-12 curriculum demands in a context that is familiar to the youngsters. Students also refer to difficulties in finding useful and reliable information there for their school projects, as well as in integrating information from either online or offline sources.

Having those remarks in mind, a group of teachers, university professors and multimedia specialists was formed in order to create a website that could work:

– as a source of content for middle school science activities;
– as a platform for communication and collaboration involving teachers and students in different schools;
– as a starting point for a learning community involving many different people sharing a preference and the willingness to learn about science.

The group’s first meetings took place during 1995. These meetings consisted mainly in brainstorming sessions in which each member gave his/her opinion about the nature and characteristics of the website in order to match not only teachers’ and students’ claims but also contemporary perspectives about science education and the educational use of ICT. Many sessions included a discussion centred on a journal article chosen by a member according to his/her concerns and field of study. From these

discussions emerged the project’s theoretical framework. Its main assumptions were the following:

- Internet is a meeting point of both formal and informal approaches to science education. It is possible with this medium to associate the playful, highly motivational climate generated by edutainment software or educational strategies developed by science centres with the curriculum-oriented classroom activities.

- Developing Internet-based resources, adjusted to the scientific and pedagogical demands of school curricula implies a partnership of teachers, scientists, educational researchers, and multimedia communication specialists.

- Student participation is essential for the development of any educational resource. One advantage of a website is its unfinished nature enabling continuous improvements based on its users’ suggestions and recommendations.

- Science is better learned in context, involving authentic problem solving as a collaborative enterprise.

- A website with the potential to promote effective scientific learning is situated, dynamic, flexible, interactive and encourages collaboration.

In 1996 the group submitted a proposal of the project to the Institute of Educational Innovation in Portugal, and was awarded a small grant that enabled the design of the website’s prototype. Later, the Program Nónio Século XXI, an initiative of the Ministry of Education aiming to support schools implementing Information and Communication Technologies, supported the project.

Figure 1 shows the sketch of an imaginary island in the homepage of the website called “Explorações nas Berlengas” meaning exploring the islands known as Berlengas, located about 90 km northwest of Lisbon. These islands constitute the Berlenga National Reservation because of the biological, geological and physical characteristics of their ecosystems, and are a popular target for study trips.
The sketch contains different icons corresponding to links enabling navigation through the pages that are part of the website. These icons represent different metaphors that provide meaning to the following pages:

- The **fortress** contains role playing activities about contemporary and meaningful environmental issues. These simulations imply the confrontation of ideas and feelings as well as decision making. Students have the opportunity to solve problems, to develop attitudes toward the topics under discussion, and to train skills involving Internet-based communication.

- The **inhabitants** contains information and activities related to the living beings that live in and around the islands.

- The **lighthouse** is an interactive encyclopaedia allowing the student to ask questions to specialists in different scientific domains and to search for information using common search procedures. The information in this page is organised on a data base with different entries.

- The **tent** gives access to several virtual study trips through the island Berlenga and the surrounding ocean. Following the trails, students have the opportunity to face situations reflecting the delicate balance of these ecosystems.

- The **athena** is a portal giving access to other sites on WWW related to the thematic approaches in this one.

- The **boat** encourages students to relate what they have found in these islands to what exists at other locations on the coast or other islands around the world. Comparing the fauna and the flora of these different locations enables
one to approach essential aspects for the understanding of biological evolution and diversity.

This version of the website is part of a story that is just beginning. What we have learned until now is that the construction of a resource with such characteristics is a long-term endeavour in which the collaboration among different partners contributing with specific knowledge and experience is essential. The positive reactions conveyed by both teachers and students have assured us that merging formal approaches to scientific learning with informal ones, which are not usually implemented in classroom settings because of their playful nature, it is a promising idea that lead us to the next step of the project, which will be the integration of the website as a resource in the teaching process of science subjects. Collaboration will be even more important in this case, involving not only the application of this new resource, but also a continuous monitoring of the learning environment that it generates.