

Children as Creators of Multisensory Geographic Information

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ABSTRACT

Elementary schools constitute an impressive potential volunteer source of geographic information. Schoolsenses@Internet is a research project that aims at creating in the primary schools community, the motivation to create multisensory online maps of local and global contexts. The development of an identity website to share experiences and projects, to establish relations and to mobilize the actors in this community is also a goal of this project. Workshops with teachers and children in diverse real contexts have been already designed and implemented to support the development of project strategies and ICT tools.

INTRODUCTION

In the context of elementary schools, children are potential creators of geographic information. The Domesday Project is a well-known example of a geographic information project that used an impressive amount of information created by school children.

In Portugal, almost every public elementary school have developed a Webpage, with the participation of children and teachers and the support of Internet@EB1 project [5]. Central topics within these WebPages are schools' community and environment. So, a huge quantity of geographic information has been created and is available in more than 7000 portuguese school websites [6].

In the context of Património@Viseu - a project developed with elementary schools - kids and teachers created geographic information related to local heritage, developing the perception of belonging to a local community while interacting with the school environment [3]. All the material was published in the website project and in schools' webpages.

In these projects, the geographic information created by kids and teachers presents a blend of different levels of abstraction and a link between rational and emotional dimensions of the information [7].

Using Domesday Project as a metaphor of a collective identity mission of schools, Schoolsenses@Internet is a research project that aims at creating a collaborative

dynamic in the primary schools community, resulting in a multisensory webmapping of local and global contexts.

Multisensory information can be defined as information acquired by various human senses in embodied situated experiences [3]. Multisensory geographic information refers to specific locations and explicitly links cognitive, emotional, and physical experiences.

Children like different forms of expression, such as sounds, visuals and movement, and want a multisensory experience, because they find it more entertaining and more engaging [1]. Although text and drawings have been used for centuries to represent multisensory data in artistic contexts, multimedia interfaces open new possibilities to explore such data in educational contexts. Moreover, tools as Google Earth (GE) [2] and smart phones are empowering citizens as geographic information creators. However, the use of simulation, multimedia and geographic information tools to explore, communicate and georeference information acquired by the various senses – including sensations such as heat, pressure, vibration, pain, and slip – is not sufficiently addressed in primary schools contexts.

This paper presents the Schoolsenses@Internet project and its contributions to the development of primary school children as creators of multisensory geographic information.

SCHOOLSENSES@INTERNET PROJECT: CHILDREN AS CREATORS OF MULTISENSORY GEOREFERENCED INFORMATION

The aims of the SchoolSenses@Internet project are:

- To create a multisensory Web mapping tool of local and global contexts;
- To built an identity Website to share experiences and projects, to establish relations, and to mobilize the actors in this community;
- To develop new interfaces and tools to support the use and the creation of multisensory geographic information, empowering different learning styles;
- To develop new modeling and simulation tools specific for elementary education;

- To develop hybrid methodologies to deal with learning evaluation that arises from a socio-constructivist use of ICT.

The workshops, developed in the context of this project, confirmed that the use of GE to explore geographic information is an engaging and meaningful task both for teachers and children. The interface and the information of GE motivated every child and adult, inviting them to cross and fly over the entire planet. It was observed that GE allowed teachers and children to easily integrate geographic information in their discourse about everyday events [5].

Children and teachers developed meaningful environmental multimedia multisensory messages to overlay GE geographic information. Since kids were able to create and edit GE placemarks, GE was also considered a usable interface for children to publish their multisensory messages [4]. It was also confirmed that the use of geographic multisensory information in environmental simulations promoted the exploration and the understanding of the simulated processes.

On the other hand, the usability of a smartphone with GPS to send multisensory messages, by MMS, was also successfully tested by children in one of the workshops. This is one of the ways school children will send multisensory georeferenced messages to be published in GE [6].

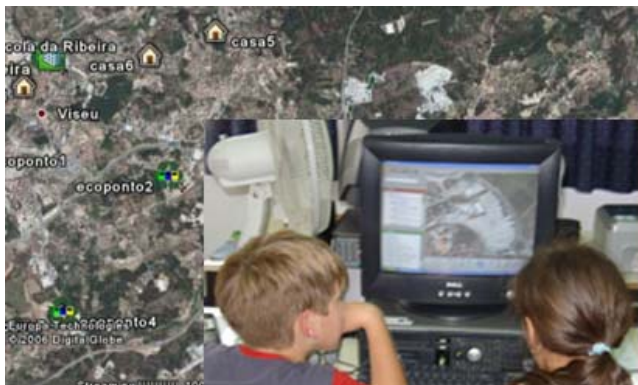


Figure 1 – Children creating a GE placemark on the location of their neighborhood recycling point.



Figure 2 - Multisensory messages created by children during the workshops to be published in GE.

Based on those results, the SchoolSenses@Internet website is being developed, and includes [6]:

- Access to a GE window, where multisensory messages are published;
- Information about the participating schools and the activities already launched and running;
- A multimedia multisensory message editor with cliparts that integrate multisensory and geo-referenced objects with diverse abstract levels;
- A modeling and simulation tool with multisensory objects;
- A viewer of the geo-referenced created and edited by the schools' community.

SUMMARY

This paper presents the work developed within the SchoolSenses@Internet research project, which aims to provide tools to the elementary school community to create geo-referenced multisensory data. The major idea behind SchoolSenses@Internet project is that geo-referenced multisensory data is an engaging way to motivate children and teachers in learning basic environmental concepts.

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