Building Bridges between Cultures through Geographical Education

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TEACHING DIFFERENT CULTURES IN GEOGRAPHY – POSSIBLE ROLES OF GIS

Pedro HENRIQUES¹, Cristiana MARTINHA²

ABSTRACT

We aim to present a practical example of the application of GIS technology to the teaching of Geography. We begin our approach by discussing some literature relating to the potential of GIS in Geography Teaching in Portugal. Next, we present a pedagogic activity developed in our faculty in which students make a movie about a trip around the world. In the movie they must engage with different cultures and develop a coherent script. The movie begins with a presentation of the route to be taken, including a requirement that the natural and cultural elements of the different landscape are described. GIS technology is the key provider of information to be used by students to support their scripts.

In the paper we discuss various contributions to the "teaching" of different cultures through Geography. We regard making a movie with GIS as a strategy that not only develops spatial location skills in students, but which also promotes their spatial reading skills, interpretation of landscapes, and perception of items that portray a culture. We believe this activity leads our students to develop a better understanding of the world, its cultures and their locations. The ability to work with GIS technology and then promote debate, discussion and respect for different world cultures is a key goal of our program.

Keywords: Geography Teaching, GIS, Teaching Cultures.

1. INTRODUCTION

In the last decade research related to GIS technology has developed rapidly, significantly in the area of Spatial Planning (which geographers have appropriated and contributed to), but also in the use of GIS technology as a resource for teaching Geography. Many of these experiments and reflections are presented in scientific journals and several international conferences.

In Portugal, the work of GIS in Geography teaching has mainly been done through teacher training and some research programs. For example, we cite the work of Nuno Gomes (2006) entitled Potencial Didáctico dos Sistemas de Informação Geográfica no Ensino da Geografia - Aplicação ao 3.º Ciclo doEnsino Básico and of Anabela David (2007) entitled Ensino da Geografia e Formação Acrescida em Sistemas de Informação Geográfica. Madalena Mota (2009) reports on the Project ConTig, with the full version of this project available at http://ubu.isegi.unl.pt/labnt-projects/contig/index.php?ID_DONDE=0101.

Drawing on the reports of these projects, we formulated a teaching program with GIS technology for high school students. In essence, we were putting into practice the views on the use of GIS noted by Tim Favier and Joop van der Schee (2009). Favier and van der Schee argue that "Geographic information systems offer many possibilities for supporting student research projects" and "projects in which students investigate real world problems combining fieldwork with GIS can have a great impact on students’ learning". We draw also on Anabela David’s statements that in the Information Age GIS has emerged as a key tool in identification of, and activities in, teaching and learning space. The technological characteristics of GIS are those of contemporary workplace, and its spatial focus is relevant to the teaching of the geographies of many places. Teaching can extend the development of this science of understanding different geographies by improving research skills and awareness in the era of global citizenship (David, 2007).

¹ Faculty of Arts – University of Porto, Portugal, pedrohenriquescosta@gmail.com
² Faculty of Arts – University of Porto, (CEGOT) Center of Studies in Geography and Spatial Planning, Portugal, cristiana.martinha@gmail.com
Reflecting on these reviews, it seemed highly relevant not only to develop our teaching experience in this area, but also to collect the opinions of the students involved in teaching experience. The teaching plan is part of the project "Junior University" in the University of Porto. We describe the evaluation below.

2. CONTEXTUALIZATION AND NATURE OF ACTIVITY

One point that has always been our concern was to contextualize the activity. Thus, we incorporate the practical work with GIS technology in the wider context of making a film of a journey (Bottentuit et al., 2009) that has a key role for the incorporation of trip maps. The practical work is an activity that motivates students and it is embedded in Geography. The film-making plan can be adapted for use with almost any student age group. In addition to having great potential to motivate students, this work with GIS technology leads them to work with new tools and promotes their ability to "read space".

We were aware that we always have to take into account the limitations of the software for GIS in the institution, and we developed appropriate strategies. In order to make implementation of the activity easier, we have created a guide that presents students with different tasks in a step by step manner. One of the specific tasks is to work with the ArcGlobe (ESRI software) and we have also created a guide to help students to use and draw maps required for the project.

In general terms, the project lasted one week. The students made a video where the task was to write a screenplay for a movie entitled "Around the world in five days". They were asked to shoot the scenes they had written on the basis of the research about the countries that were part of their journey. The movie must integrate the maps relevant to their journey.

The design of project had two sources of inspiration, the ConTig work mentioned above and project developed by Palma (2009). ConTIG works with GIS in Geography Teaching and Palma discusses cinema in teaching Geography. These two influences underpinned our project that sought to connect Geography Teaching with GIS and Cinema.

3. SURVEY TO STUDENTS – GAUGING THEIR VIEWS ON THE EXPERIENCE

To establish students' opinions about their work with GIS technology we developed and applied a brief on-line survey. In the survey, the students express their opinions about the use of this technology. The survey may be found at the website associated with the GIS project: https://spreadsheets.google.com/viewform?hl=pt_PT&formkey=dG11NzZPd0tUTnhFeklvVTdZczNWdFE6MQ#gid=0

Because the teaching plan had a global (rather than local) focus, we decided to extract the data referring to didactic work with GIS technology and present it here. The students' opinions are shown in Figure 1.

We conclude from these data that students generally considered working with GIS technology very interesting. In this sense, given that there are no other GIS projects in our "Junior University" (Martinha, 2009), we believe that it is very important in the future to make more projects in this area. Projects can be either constructed for secondary education students (lasting for one week and described as a "Summer Project ") or a shorter one day models for primary school students (category "Summer Experience" and "Summer Workshops ", respectively). It is our intention to fill this gap in the near future.
4. CONCLUSIONS

Our conclusions about the use of GIS in teaching Geography may be summarized in the following set of key ideas:

- Research on the application of GIS to Geography Teaching can be extended further through empirical studies about the use of technology adapted to different levels of education and different issues;
- GIS is an important feature of training Geography teachers (as part of initial and continuing training) about not only how to use GIS technology, but also its adaptability and integration within geographical curricula;
- Reflection of the entire Geography Education community is required on the use of GIS technology in developing skills in students. Here, we believe that current discussions in educational research should not be just about which competences should be developed by students at each level of education, but it should address the methods and resources we can use for that purpose. At this point, we believe that the thinking about ICT in education is absolutely crucial;
- Higher Education institutions that develop pedagogy and research in this field should make an effort to support the "use" of this work by teachers of Primary and Secondary Schools.
- GIS is an area to be further exploited by publishers and 'educational technologists'. This may include teachers of Geography in teams with skills in GIS to produce materials for teachers and students.
- Reviews of the Geography curricula should give more importance to educational work with GIS technology within their methodological suggestions.

Given this, we believe that more intense reflection on practice in developing GIS and geographical skills may open new directions for Geographic Education. It is our wish to contribute to this work.
REFERENCES


