

SCHOOL TACTILE CARTOGRAPHY: EXPERIENCES WITH TEACHER TRAINING, DIDACTIC MATERIAL PRODUCTION AND MAP USE

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BACKGROUND AND OBJECTIVES

The main theme of this research is School Tactile Cartography, particularly the analysis and discussion of the tactile map production and use, including its relevance in the teaching of geography and cartography. The study also highlighted the need to improve the continuing education of school teachers, in order to prepare them to include students with visual impairment at the classroom.

Teachers, as mediators in learning, have a relevant role to in the process of inclusion, that is why they have to be prepared to work with special needs students, as a meaningful experience at classroom and not only a formality of the law. Knowledge and skills to deal with inclusion at schools should be present in the teacher's initial education, but the majority of courses do not prepare them to really include special needs students in the classroom. In this way, continuing education courses become the only opportunities to get the sufficient experience to face this challenge.

School Cartography is at the crossroads between Cartography, Education and Geography, and it is taught with the aim of developing map teaching and learning methodologies, and children's conceptualization of space. NCPs (National Curricular Parameters) in Brazil emphasize the importance of "knowing how to use cartographic language in order to obtain information and to create a spatial representation of geographical phenomena", through the teaching of Cartography as one of the objectives in the Geography teaching program, in the primary and high school education system. NCPs also suggest thematic issues, listing content that includes the assessment and interpretation of information expressed in cartographic language. Tactile cartography has been studied in Brazil for over two decades (Almeida, 2005, 2007; Carmo, 2010; Sena, 2008).

METHODS AND RESULTS

Cartographic activities in Geography classes are important to develop spatial abilities and its observational, perceptual and representative nature. Graphic representations are essentially visual and perceived by sight, but they may also be analyzed by touch, as long as they are designed with this purpose in mind. Many have contributed to tactile mapping, such as Edman (1992). The presence of students with visual impairment in regular classrooms requires schools to make cartographic material that may be adapted for touch available to these students and to prepare teachers to deal with this reality. As for the training of teachers, it can be stated that the quality of teaching, new educational approaches and teaching materials are fundamental elements in the initial and further education programs for these teachers.

This study analyzes the importance of further education courses for teachers and their application to the teaching of Cartography in schools, particularly for students with visual impairment, both in specialized or regular schools. Courses and workshops on Tactile Cartography and the teaching of Geography, held between August 2006 and October 2009 in Brazil and Chile (Figures 1), were selected for description and analysis in this research. This is part of an international project developed in cooperation with the University of São Paulo and the Metropolitan Technological University in Chile. Through these courses, it was possible to see the difficulties that teachers face in working with Cartography, and especially Tactile Cartography, in the classroom.



Figure 1 – teachers during tactile cartography workshop

During several workshops about tactile cartography, done over the last 3 years, teachers have participated, with dedication and creativity, mainly during events of didactic material construction. In general, they are open to learn about mapping and looking forward to include tactile graphic materials in their geography classes (Figure 2).



Figure 2 – tactile mapping activities at the Laboratory of Geography Education

FINAL REMARKS

As a result of the courses given, the relevance of tactile cartography in geography education and its role in the inclusion of students with special needs were emphasized together with the importance of preparing school teachers to work with tactile maps.

Further education courses can be an improvement in the teaching and the dissemination of techniques involved in the creation of tactile didactic material, in the same manner that guidelines for their use may represent significant pedagogic renovation that will increase the use of these resources by all students. School Tactile Cartography brings many possibilities of application in education and in the daily life of visual impairment students. In this way, it contributes to inclusion and in giving the same opportunities to a person with visual impairment of those who can see.

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