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An Atlas Designed for Children — The Electronic Approach and Reality

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Abstract

We are living in a period which is experiencing rapid change in both technology and approaches to education. Teachers want age appropriate materials that can be used within the schools and accessed by students on their own. An electronic atlas for children is an example of one such material. This paper looks at two issues relevant to the use of such material: the use of the Internet in Canada and Québec. and how a Québec electronic atlas can change the way basic social science concepts and the use of graphics such as maps are presented in elementary education.

Children's Understanding of Generalisation Transformations

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Abstract

Children are using maps presenting their local environment (large scale maps), their country or the surrounding countries (medium or small scale maps), as well as world maps (very small scale maps). Do children understand the decreasing map scales? Can children recognise the differences of spatial representations in various scale maps? Behind these two questions the process of cartographic generalisation is hidden. The aim of the present study is to classify the children's conception of generalisation transformations. A questionnaire was given to 12 year-old secondary school children. The answers record children's response to the generalisation transformations. The results are helpful for teaching purposes and for designing more effective maps for children.

Knowledge of Maps and Information Extraction from Them in the Bulgarian Schools

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Abstract

This report considers some questions related to using maps and atlases by Bulgarian pupils in geographical education. The research done is about the knowledge of pupils on main cartographic topics about scale, projection, locality, legend objects and phenomena described on the maps and about the extraction of the necessary information. The questionnaire method is used for defining the knowledge of pupils of different ages and from different schools in Bulgaria. The priorities and defects of the maps and atlases used for education are pointed at on the basis of pupils notions about the information presented and the difficulties established when using maps. The research results and conclusions drawn lead to some recommendations about map and atlas design for the appropriate age group. The analysis and synthesis of the questionnaire answers can also be used by teachers in the training process of forming and perfecting pupils' skills for using geographical maps and atlases.

A Controlled Experiment in Teaching Physical Map Skills to Grade 4 Pupils in Elementary Schools

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Abstract

A new unit for teaching physical map skills to Grade 4 (aged 9—10) students in Israeli elementary schools was developed. The classroom aims and activities were suggested by the results of previous research (Livni and Bar, 1998). An evaluation was made of the effectiveness of the Unit for enhancing:

1. the cognitive abilities required by pupils learning the necessary skills and
2. the knowledge of map skills possessed by pupils.

Our Experience in Extraterrestrial Mapping for Children

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Abstract

Some information about planetary mapping for children is given. The concept of the extraterrestrial geography is described. The role of planetary maps and globes in it is underlined. The cartographic study of celestial bodies is briefly elucidated. A project is proposed for children on compiling and publishing a series of outline and contour maps of Mercury, Venus, Mars, the Earth's Moon, Phobos, Deimos and giant-planet moons. The development of the programme for schools could become an impulse for the propagation of space research results and the first step for studying extraterrestrial geography.

Mapping as a Challenge to Improve Active Readers: Investigating Children's Geographical Skills

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Abstract

The present paper will summarise the experience developed in four Portuguese schools with children from ages six to ten years old exploring the potentials of cartographic material to discover both the characteristics of familiar places and their representation. The main point was to create learning strategies in educational context through which children become able to deal with imagination and projection, as well as efficacy and disruption, with processes of mapping rather than with maps as finished objects (Cosgrove, 2000).

Graphs: Make and Understand

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Abstract

We tried to understand how these students construct and read graphs with real meaning, observing the forms of coordination between subject and object. To understand this coordination, we studied the subject under Piaget's theories and the object under Bertin's Neográfica theories. Using these two theories we could find a methodological proposal to improve students in their skills to make and understand graphs. It is important to the subject: to develop their ideas of structure and to understand geography better.

The graphs inside Geography textbooks have a lot of problems, and the most serious is that the authors and editors do not consider graphs as a language, put graphs without connection with the content of other languages: photos, drawings, texts. The authors do not help students find information; do not explain the structures of graphs. Under these circumstances we can understand why the students do not know what graphs are, and in the same case as their teachers, do not know that graphs are worth interpreting.

Atlas of the Municipality of Santa Helena /Pr/ Brazil

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This work analyses the different variables that compose the landscape of the municipality of Santa Helena and looks at the construction of thematic maps about it. The principle objective is to enable elementary school teachers to work with children who through their perceptions and life experiences in their own locality can contribute to the process of mapping the municipality. The project was developed in 1999 by request of the teachers themselves and the mayor in order to know their city better and to have maps that would be instrumental in teaching/learning about municipal and regional space.

A Tourist Map for Children

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Abstract

In Hungary, there is no experience of creating tourist maps for children because there have not been any made. The teaching of map reading is done by local tourist clubs and associations. In the absence of special maps they use orienteering maps for this purpose. The reason for this selection is that Hungarian tourist map scales are small, they are inaccurate and a little bit difficult to orientate with them. An orienteering map is more abstract (special key of signs) and does not contain tourist objects or pathways and text. In spite of these deficiencies they are more suitable for orientation because of their scale and the more accurate representation of the terrain. By the combination of these two types of maps — using their advantages - we shall try to make a proper map for children.

Hungarian Homepage about Maps for Children: „The Last Chapter”

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Abstract

This paper sums up the work related to the completion of the homepage to present cartographic concepts taught for children in Hungarian elementary schools. The principal topics to be read are:

- Changes in the original structure to present themes: reducing difficulties during the explanation of concepts.
- Applying and adapting the results of international research in the design of the Homepage
- How to be continued?

The Present Place of Cartography in Geography Teaching Different Levels.

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Abstract

Analysing the past 20 years in geography teaching, the total number of the compulsory lessons has been reduced at least to its 1/3 part meanwhile geography as a subject would have required enlargement. The subject matter became condensed, focused on principles. It automatically affected thematics in two main ways. The special cartography lessons should undertake both teaching the children to certain technics and methods for using maps in general, also forcing teachers using atlases and maps as standbys while teaching descriptive geography. Reduction of the number of lessons concerned the secondary schools tragically. Some types miss geography absolutely, so students aged 14—18 are far from being familiar with cartography or its printed forms.

Comparison between the Legend System of Different School Atlas Levels

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Abstract

When a school atlas is planned, the symbols and colours used in the atlas should be reflected in the legend. It is something to be worked out very carefully. School atlases usually exist in series for different ages. Therefore, the aspects of planning an atlas demand a complex way of thinking over the whole verticality of products. This is a common job for the geographer and the cartographer also taking the age categories, skills, tradition and methods into consideration. This survey offers a quick view through this systematical co-operation between the teacher as the user and the cartographer as the constructor.

An Atlas Designed for Children — The Initial Pilot

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This workshop presented aspects of the first pilot project undertaken in connection with developing materials for an electronic atlas for children. A videotape of Quebec children in the first year of Cycle 2(8 to 9 years of age) working with different materials (model, a photograph, topographic map, and computer fly-over) was presented. The pilot materials were developed to test the students' ability to work with, and comprehend, elements of the physical landscape (for example, valley, hill, river and lake etc.) of their region. A retrospective examination of the pilot materials and what can be learnt was also presented.

Manipulative Map Projections in Classrooms: Linking Cartographic Concepts to the Barbara Petchenik Competition

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Abstract

The Guyou Projection and those on the icosahedron, made on 32 squares and 20 equilateral triangles respectively, can be rearranged to form a great variety of maps of the world. In a sense this is true for all map projections given their various aspects: equatorial, polar and oblique. But this is not an obvious point made in most textbooks. Manipulative projections allow young students a way to create their own projections of the earth and thus demonstrate this point. Along the way, these manipulations test their knowledge of the geographical relationships between continents and oceans and provide opportunities to consider how the map projection can be used in solving various geographic problems. In addition, general questions about the nature of map projections are raised. In this hands-on workshop, a number of geographic propositions are stated for participants to address with sets of these projections.

CD-ROM: SWISS MAP TROPHY

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A learning tool for map reading: the SWISS MAP TROPHY— the perfect combination of theory and fun

The professional created multimedia program is based on the Swiss National Map series 1:25 000 and on the Road Map 1:200 000. The comparison of representative map sections with aerial photographs is an integral part of the program. Whoever needs to first build up the basics of how to use maps is given the opportunity to work through several chapters of principal map theory. This theoretic part includes topics like “distances in different map scales”, “landscapes in a ground plan view”, “contour lines and three-dimensional terrain”, “individual symbols and signs”, ‘co-ordinate grid’, ‘trigonometric points and spot heights’, “generalization” and ‘revision of maps’.

CD-ROM: Atlas of Switzerland — interactive

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An ideal tool for teaching and learning to analyse statistical material and 3D
visualization

The *Atlas of Switzerland — interactive* is a joint project between the Institute of Cartography (ETH Zurich), the Swiss Federal Statistical Office and the Swiss Federal Office of Topography and aims to establish an international benchmark for digital national atlases.

The Atlas consists of carefully designed maps and 3D displays with a custom-made interface and supported by many functions which make it possible to collect and compare data in a spatial context. Data can be called up and simple analyses made for both the statistical maps and 3D topography. As an integrated teaching tool, it is ideal for all conventional forms of teaching and learning, offering particular support for project-related and individual work, for instance as an interdisciplinary research tool.

Complementary Methods in Teaching Geography: Hands-On Materials and Computer Software

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Abstract

Computers revolutionised education in general, and geography teaching in particular. However, the last decades have proven that the computer alone is insufficient to provide space perception and basic concepts that are needed to grasp and handle further information. One of the possible handy materials, a new educational kit has been worked out in Hungary, and developed in the United States. This article includes a short description of this material (the Lénárt sphere) and its components, including also the suggested areas of application and a list of international references on this project.

Map Tales - An Educational CD-ROM Project for Teaching Modern Cartography and its History

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Map Tales is the name of a joint project of the Department of Cartography and the Educational Media Group of Eötvös Loránd University, Budapest. The goal of the project is to develop and produce a new, interactive, multimedia CD-ROM of cartography. The product is a response to the growing need teachers and students in Hungary should feel, and it was designed to meet the requirements of both user groups.

Map Tales CD is not a cartographic work, but a work of cartography. The unique feature of the product is the history-oriented approach to cartography. As a historian of cartography, I am especially pleased to have the opportunity to re-integrate old maps into the present cartographical education. Beyond old maps, however, there are always the users, and this social and cultural dimension offers a context to understand the changing nature of cartography from the beginnings to the present.

Children, Maps and the Internet

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Abstract

The cartographic resources available on the Internet are growing rapidly. Some offer powerful interactive multimedia tools, which bring complementary modalities under user control and offer the opportunity to enhance users' understanding of spatial relationships. Others are no better, and some much worse, than conventional hard copy maps. Particular considerations apply to children's use of maps on the Internet. These include issues of accessibility, relevance age appropriateness and support for learning. This paper reviews a selection of web-based cartographic materials, including those that make use of virtual reality technology and attempts to identify features that are likely to enhance learning and those that are more likely to inhibit it. Some strategic teaching principles are discussed as well as aspects of curriculum progression.

A Rio de Janeiro School Atlas: a proposal for a local study

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Abstract

With this first Rio de Janeiro City School Atlas we intend to offer a valuable didactic resource for teachers and pupils of the third grade (9 years of age). The atlas includes maps and charts, which offer a real social and economic portrait of the city. In the future, by representing and interpreting different landscapes through conventional cartographic procedures, we intend to extend the study of the city' to the other grades of elementary school.

This Atlas was commenced in January 1998 and will be published in September 2000. The initial 100,000 copies will be sent to the libraries of the 1029 schools, which form the municipal Rio de Janeiro school network.

Risk Mapping and Popular Participation: An Instrument Preventing Sliding Hazards in Slump Slopes

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Abstract

The aims of this paper is to present a cartographic prod ice to indicate the knowledge level of the population about sliding hazards in slump slopes.

The methodology consists of collecting environmental information using a graphic questionnaire (spatial counter) in order to represent environmental aspects of terrain spill from each residence and the community's inhabitants' opinion about sliding hazards, A collection arc made by students at the age of 11 and 15 years.

The dimension of the risk is indicated with color hierarchy making sentimental mapping and constructing the community risk map. Each residence is a risk point in the community. Several points with the same hierarchy represent a risk zone.

This practice was tested in the “Parque dos Mineiros “ Tuiuti Community —Rio de Janeiro and was important to demonstrate the ignorance inhabitants referent to environmental aspects. A confrontation of the community map with a inhabitant's sensation and the geotechnics risk map elaborated by the technicians of the city hall of Rio de Janeiro notices the estrangement of the technical knowledge and the popular knowledge and the need of decoding these instrument technicians' scientific knowledge for the common sense.

The community risk map has an important role, because besides reading, describing and understanding the space reveals the peoples sensation in relation to a environmental problem that puts in risk the life of thousands of people. The cartographic language as a didactic resource makes the process of knowledge acquisition quicker and more agreeable.

This practice works as a participatory local diagnosis in the sense of subsidizing, proposing and to selecting a group of actions in environmental education seeking the understanding in the best way of slump slopes and the preservation of the collective space.