Proceedings of the Joint International Cartographic Association Seminar Maps For Special Users, Wroclaw, Warsaw-Laski, Poland, June 2-4, 1998.

Where Abstracts were not available the introduction or first few paragraphs of the paper have been included.

WHAT AND HOW? THE INTRODUCTION OF BASIC MAPPING CONCEPTS IN THE EARLY ELEMENTARY GRADES

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Abstract

Elementary children are a special group of map use, They will be both the producers and users of maps in the emerging electronic age of the 21st century. What concepts should young children learn, and how can these be taught? The paper provides one overview of how the concepts of scale, plan view, map symbolization and the nature of a map key can be introduced and presented to young children in an interactive manner. It concludes that students, from the earliest grades, need to be introduced to mapping concepts and work with maps in a challenging yet meaningful and interesting way.

PRINCIPAL PROBLEMS OF CONSTRUCTING MAPS FOR SPORT ORIENTEERING IN THE LIGHT OF GENERAL THEORY OF CARTOGRAPHY

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Abstract

Sport Maps (SM) are specific enough to constitute a separate group. The first SM was published in 1962. Since then sport cartography has been forming its own concepts and methods. Yet, a perfect SM has not been published. Therefore the aim of this paper is to point out major defects of existing SM, and to present the principles of SM construction.

PROBLEMS IN CARTOGRAPHY FOR CHILDREN IN RUSSIA

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Abstract

When considering the topic 'Maps and Children' general and specific cartographic, geographic, pedagogical and psychological problems arise. Although the map is a very attractive and powerful source of geographical knowledge, when used in geographical study may create both political and methodical problems There is also the issue of teaching the basics of cartography within the schools. To date, the Internet has not been explored thoroughly for the cartographic possibilities that it can offer to youth and non-school activities. The map can be a valuable tool in assisting the development of youths and teenagers, as it allows one to solve a set of tasks (pedagogical and social). In work undertaken in connection with a 'Club Karla", a children's cartographic club in St. Petersburg. Russia, it was observed that students involved in map construction were able, through self-discovery, to identify the complex nature of maps and problems associated with this tool. However the majority of the problems could not be solved by students themselves and require the guidance and intervention of a cartographer. This paper also raises some issues of 'mapping and children' which require international investigation and collaboration.

EXPERIENCE OF THE WORK OF A CHILD CARTOGRAPHIC CLUB IN A LARGE CITY: AN EXAMPLE OF "CLUB KARTA" OF THE CHILD'S PALACE, SAINT-PETERSBURG

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Abstract

Experiences associated with a children's cartographic club are described. The structure of the Young Cartographer' program of the Child's Palace of Saint-Petersburg, Russia, is presented with a description of the educational tasks and works produced. The successes and problems of the club's activities are outlined. It should be noted that, at the seminar meetings in Wroclaw, this presentation accompanied a poster display of samples of the student's work.

INFORMATION CONTENT OF MENTAL MAPS OF THE JULY 1997 FLOOD IN WROCLAW, POLAND

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Abstract

Polish teachers are realising that, for developing map-reading skills, it is important to develop a student's skill in creating a 'mental map' of an area. The skill of creating a mental map can be linked to frequent contact with maps. The well-remembered spatial representation of an area (basic geographical content and then at a later stage the elements of the infrastructure, etc.) makes the concentration on new contents – newly introduced elements - easier.

CONTEMPORARY CARTOGRAPHY FOR CHILDREN IN BULGARIA

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Abstract

This paper describes a new way for devising maps for children in Bulgaria. Until recently, cartographers considered that children aged 6 - 9 too young to work with maps as they did not have enough cartographic background or experience. Cartographers did not think that Bulgarian children of this age would use maps and atlases as school aids. The result of this is an absence of both maps for children 6 to 9 years of age and attractive atlases. There are two reasons for such poor mapping for children: 1) the use of standard topographic symbols and geometric symbols; and 2) a lack of good contrast and bright colors, attractive symbols and pictorial representations.

The authors conducted research and experiments with 80 pupils from three different primary schools in Sofia. Children were asked to draw symbols for weather maps of Bulgaria, a map of their home region, and create symbolic presentations of different objects such as a church, school, playground, hospital, post office, and tree, etc. This work with the children created a great interest in map drawing. The activities also helped the compilation of an interesting and very useful atlas for first -and second -year primary school pupils.

The maps from the atlas, devised from various sources, used symbols produced by children, nice pictures of world famous objects, legends of the creation of the Earth, the Earth's rotation, and the changing seasons of the year. The themes of the maps are based on the school curriculum. The main characteristics of the graphics help to draw the child's attention to the idea of the base map. Some conclusions from the joint work with children and atlas creation are made. Areas for future investigation and new ideas concerning the cartographic presentation of objects and phenomenon are proposed. Photo-realistic 3D map animation and multimedia are proposed as avenues which can lead children to a better understanding of maps during their first years at school.

DESIGNING SYMBOLS: DISCOVERING CONCEPTS UNDERLYING THE VISUAL PROCESSING OF MAP SYMBOLS

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Abstract

An active workshop involving free-hand drawing, visual analysis, and discussion. By considering various aspects of the process of designing symbols, participants discover underlying concepts in generalization and abstraction in symbol and legend design, map scale, and some perceptual considerations that are involved in map use.

MAPS THAT BRIDGE REALITY AND THOUGHT: TOWARDS AN UNDERSTANDING OF GEOGRAPHIC CLASSIFICATION IN GEOGRAPHIC EDUCATION

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Abstract

In the broad view, it is through vision that we acquire our fundamental knowledge about the worlds around us. This argues for a vision-based approach to geographic education, one that develops basic concepts from the processes of visual perception rather than from some division of knowledge.

Among the most important geographical concepts are the spatial generalizations we call regions. Children may not understand these generalizations unless they know how they were created, especially if there is a disparity between what they see (i.e., reality around them) and what they read or are told (i.e., formal thought). Information about reality is visually complex and is math- test in both explicit and implicit clues. Information about the latter, which is often found in maps in children's atlases, has usually been grouped or classified under such abstract topics as climate, natural vegetation, land use, and landforms.

This presentation explores these ideas with land forms, our perception of them, and how physiographic diagrams are a logical "bridge" in creating our classification of plains, hills, and mountains. The application of this approach to other classifications is considered.

THINKING ABOUT GEOGRAPHIC REGIONS USING DOT MAPS, PHYSIOGRAPIC DIAGRAMS, AND CHERNOFF FACES

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Abstract

A hands workshop in which participants manipulate several different graphic images (dot map, physiographic diagram, and set of Chernoff faces) in order to discover the nature of the spatial generalizations we call geographic regions.

A TRANSPORT MAP FOR CHILDREN

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Abstract

Slàx is the second biggest town in Tunisia in regards to its population size and urbanised area. First of all, the population of the who1e agglomeration counts more than four hundred thousand inhabitants, and its area is much more than one hundred and fifty square kilometers. Secondly, this town has a semi-circular-concentrical plan, probably one of the most original in the world, as al the roads converge to a focal central point in the downtown. Thirdly, the structure of age population is characterized by a very high percentage of young people, because Tunisia belongs to third-world countries. Fourthly. as in Tunisia the education level is relatively high, too, the proportion of children and students using daily the network of public transport is very high and increasing continuously, similarily to the number of educational institutions.

Yet, the users of public transport system do not have any helpful map to move from one place to another, or to define precisely their trip. A map showing the main bus lines would he very useful for them.

Our purpose is, on one hand, to produce an easy to use map that would contain the most important topographic features, which are important for students who use public transport. On the other hand, we want to discuss, with regard to the present case, some issues of children cartography concerning semiological aspects, and the differences that anyone should take into account when dealing with these special maps, compared to the one intended for the large public readers.

A STUDY OF CHILDREN'S PERCEPTION OF CARTOGRAPHIC LANDFORM REPRESENTATION

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Abstract

This paper presents the ways different methods of landform representation are read and
interpreted by primary school students. In this study four different methods of representing landform are examined: contours, hypsometric tints, oblique hill shading and a combination of hill shading and contours. Each method was used to represent the landform of a common area, which also contained other information typically found on topographic maps. For each map a set of questions was composed with the goal of asking the students to extract the same kind of information regardless of the map type. Students' understanding of the landform information as well as their comprehension of the fundamental elements of the geographical space were examined. The test results were statistically analysed and discussed. Of particular interest are the suggestions that have application for both cartographers designing school maps and primary school teachers of Geography and Environmental courses.

A FINGERTIP APPROACH TO MARSHALL'S ARM: TACTILE REBUS SYMBOLS TO O.S. GRAPHICS

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Abstract

This paper explores the potential value of maps designed for visually impaired people to other user groups. Mainstream primary school children used a tactile map designed for children in a multi-sensory impairment unit. The map incorporated tangible Rebus symbols and was used in tandem with a paper underlay designed using O.S. style symbols. The results are set out together with indications for future applications of the dual system for mainstream schools.

SONIC CODING AS COMPENSATORY ENHANCEMENT OF TACTUAL METHODS USED IN EDUCATION OF CONGENITALLY BLIND CHILDREN

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Abstract

Authors have proposed to apply sonic method of encoding as the way to organize the scene representing chosen objects from environment of blind children. For this purpose the original sonic digitizer has been made and fully tested.

Decoding process is based on sequential orthogonaly oriented motion inside the operational area composed of two (A4) parts, each with the same system of acoustic encoding. Figures representing real or artificial objects are encoded as the succession of sounds. Differentiation of signals allows identify the position of each point-element being of blind's interest. Sonic models could be applied in education process for recognition of real environment and moreover — for creating imaginations connected with spatial notions such as shape, relative position, orientation dimension of object and whole composition of scene. Generalization of shape representing object has been made using only several distances according to the most convenient, for human hearing perception, changes of sound-signals. Differences of "high" have been fixed suitable to Kodaly's and Orff's-scales.

Authors have prepared the collection of introducing tests. Wide analysis of ways to learn spatial relations in separately treated programmes (according to stages and subjects) allows choose the direction of practical solutions. Finally — collection of educating tests will be prepared according to the programme of each class and each subject. The project is continued as the research programme sponsored by The Committee of Scientific Researches No. 9T12E04212.

THEMATIC TACTILE MAPS OF MENDOZA (ARGENTINA)

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Abstract

This work is a synthesis of the first pan of a major project. The aim is to demonstrate the necessity of tactile cartography in geography teaching, An investigation with 35 blind and visually impaired people verified the basic necessities for their learning. Three examples of thematic mapping are discussed.

CARTOGRAPHIC EDUCATION OF CHILDREN IN HUNGARY: EXPERIENCES AND IDEAS

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Abstract

This paper is based on a lecture about elemental concepts of Cartography for children in Elementary Schools from 3rd grade onwards, developed in 1997. The purpose of the lecture was to complete the knowledge of the children about maps, first of all within the subject Protection of the Environment" (from 3rd to 4th grades) and later in other subjects (e.g. Geography).

The material is divided into six themes (from "History of Maps" to "Maps on the Internet") and these themes are explained by using Digital Multimedia and different software. The bigger part of the graphic materials in this work has been collected through the Internet and placed on the Home Page of the Department of Cartography. This material is only the first part of a more detailed investigation related to this topic and the practical possibilities of using World Wide Web during teaching Cartography in Elementary and Secondary Schools of Hungary.

THE ATLAS OF LOWER AND OPOLE SILESIA

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Abstract

The Atlas of Lower and Opole Silesia (1997) has an educational and informational character. It can be a remarkable help for both teachers and students. Supplying the atlas with the German and English translations of titles and explanations of maps eliminates the language bar (in its propagation also among) for foreign readers. Regional atlas shall meet both educational and cognitive expectations.

FROM PICTURES TO POINT SYMBOLS: PROMOTING LEARNING ABOUT TREMATIC MAPS

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Abstract

Young children's first experience of small scale maps is often through picture atlases. But pictures on maps are not always as easy to interpret as they seem. Later, when pictures give way to symbols, children appear to have substantial misunderstandings about what the symbols represent and why they are located where they are. This workshop looks at some evidence for children's misconceptions about map-located pictures and the meaning of some thematic map point symbols and will attempt to devise some strategies for providing learning support.

ORIENTEERING MAPS TOWARD 2000

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Abstract

In the last years orienteering has become a worldwide sport. Members of the international Orienteering Federation (IOF) come from 49 countries from all continents. The maps for orienteering sport are fully standardised, however the Map Committee of IOF is working on a new legend ISOM2000 (International Standard for Orienteering Maps). On the one hand there will be only minor changes due to computer technology (there is a special program for drawing orienteering maps). On the other hand we have to take the new strategy of IOF into account. There are several different forms of orienteering, which are now at equal level: the traditional orienteering sport (foot-o); winter orienteering with ski (ski-o) mountain bike orienteering (MBO) and orienteering for the handicapped (trail-o).

This new strategy was announced in 1997 and the Map Committee will also have to rethink how to serve better the new forms and how to make special maps for them. The first official legend for orienteering maps was published in 1968 and since then it has been fully accepted all over the world: it is a common language of orienteers.

It can be very interesting for cartographers to learn about maps of Småtroll events. The term Småtroll indicates the events for young children (5-8 years old) using special maps (which of course are not standardized).