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ON SOME FUNDAMENTAL COGNITIVE ISSUES IN CARTOGRAPHIC EDUCATION

EVANGELOS LIVIERATOS

Abstract

Designing a course in cartography for children, the concept of representing the main theme of interest, embedded in a certain surrounding space, is the dominant one. Here, codification, communication and descriptive procedures are characteristic in the overall production process. In this paper, the importance of the geometric parametrization of the space and the themes to be mapped, is discussed as a tool supporting the correspondence with the concept of “position” or “placement. The importance of this parametrization as a cognitive issue, in terms of reference frames and point coordinate systems, is related to the density of information to be mapped and to the representation scale used. The digital treatment of the cartographic process and certain new technologies imply new possibilities in managing the geo metric parametrization of the representation.

The Role of Non Explicit Symbolization in Map Expression by Children

Takashi Morita
Hosei University

Introduction

In cartography, map symbols are defined explicitly by legend. In the general process of cartographic communication as shown in [the] figure, there are the emitter and the recipient. The emitter is the cartographer and the recipient is the map user. The cartographer defines at first what he or she wants to say. This is the subject or the theme of the map. Once the subject is fixed, the cartographer begins to collect the data and information are gathered as the knowledge source. This knowledge is then represented through codification and symbolization to visualize a map. In this process the cartographer considers the relationship between definitions (by words) and symbols (by graphic symbols) and organization of these symbols. The method should be defined explicitly. But what is happening when non cartographer draws a map?

PEDAGOGIC MAPS FOR CHILDREN IN CHINA

Shaoxiang Ni and Shufeng Lu

Abstract

In China, pedagogic maps for children have played a great role in improving the geographic teaching in both primary and middle schools. However, some problems related to this kind of map still remain to be solved, at present, these include tying them too firmly to the geographic courses in school, more or less outdated contents, restricting students' use of this kind of map to simple exercises such as recognition of geographic directions, and a lack of available studies on the theory and methodology of this type of map. Some suggestions of measures to deal with these problems are put forward in this paper.

**“I LOVE MAPS...BUT IS THAT A ROAD MAP OR
A WEATHER MAP?” THE KNOWLEDGE OF MAPS AND
ATTITUDES TOWARDS MAPPING IN QUEBEC SCHOOLS
(KINDERGARTEN, GRADES 1-11)**

Jacqueline M. Anderson

Abstract

This paper presents part of a recent study designed to provide insight into the knowledge of maps and attitudes held towards them by Quebec students five to 17 years of age. To place the study in context, a brief outline of Quebec's programmes pertinent to mapping is presented. This is followed by an overview of the study's methodology. The students' responses to the questions. "What is a map?" "How do you feel about maps?" "What do you love most about maps?" and "What do you hate most about maps?" are then examined. The students' answers to viewing several different kinds of maps are also summarized. The paper concludes with a discussion of some of the implications of the findings for cartographers and educators.

CHILDREN'S REPRESENTATION OF THE EARTH'S LAND MASSES ON PLANE AND SPHERICAL SURFACES

Patrick Wiegand

Abstract

This paper summarizes the results of 4 related investigations into young children's understanding of the world and its representation in map and globe form. Taken together, the combined results from different methodologies indicate patterns in children's thinking about the configurations of the Earth's land masses. Issues raised by the findings are given and their implications for education presented.

SPECIFICITY OF MENTAL SCENE CREATION CHARACTERISING EDUCATION PROCESS OF SEEING AND BLIND CHILDREN

EWA KRZYWICKA-BLUM

The model of geometric order of scene, that is represented by elements of contents of “a map” can be created according to different types of perception using one of the scenes:

- sight (visual map)
- touch (tactual map)
- hearing (location system)
- VISUAL MODEL

The most popular is the first type of models, where all elements of scene are visually fixed and the background is formed from visually empty areas.

The point of graphically organised paper model can be changed into the unit square (pixel) on the computer's screen. The signs are formed from the collections of unit squares represented only by closed, contour lines or by filled areas. According Bertin's theory to express the signs representing elements of reality on visual model it can be used some of six variables: size, value, pattern, colour, direction and shape. It is still not precisely settled if the position of element is the variable?

INSTITUTIONAL SCHEMES FOR THE BARBARA PETCHENIK CHILDREN MAP CONTEST IN GREECE

Chryssoula Boutoura

Abstract

In 1995, the Ministry of Culture and the Ministry of Education in Greece agreed to support the joint project “MELINA - Education and Culture” in honour of the late Minister of Culture, Melina Merkouri. The project’s aim is the promotion of the cultural dimension in education through the incorporation of refreshing doses of Arts and Culture into daily school practices. This 10 year project began its experimental phase in September 1995. It has been introduced into 46 schools throughout Greece, to students in the first class of primary education (6 years of age). Eventually it is planned to cover all levels of education. In its second Conference, the Hellenic Cartographic Society started discussions with the Ministry of Culture to introduce, in the context of the MELINA project, map drawing. As a by-product, the proposed map drawing would generate maps for a national Greek contest and allow for the selection of maps for participation in the International Cartographic Association’s (ICA) Barbara Petchenik World Map Contest. In this paper, the basic ideas of this initiative are presented with the principles of using and constructing maps by children as part of an integrated artistic, cognitive school process and cultural experience.

TEACHING MATERIAL FOR CARTOGRAPHIC EDUCATION AND TRAINING OF CHILDREN

Wolfgang Meissner

Introduction

Three examples of cartographic contributions to stimulate map-reading education of children will be presented here: A) a town map game, B) a children's town map and C) a cartographic quartet. These will be discussed consecutively.

FUN AND GAMES IN LEARNING HOW TO READ MAPS

Hans-Uli Feldmann

What is a map?

A map is a form of graphic communication designed to convey information about the environment. It provides a scaled-down view of reality, extending the observer's range of vision so that he sees before him a picture of a portion of the earth's surface. A major function of maps is to assist in the determination and understanding of geographical or statistical phenomena located in their natural spatial relationships.

Today, maps are an integral part of daily life. It is difficult to avoid being confronted with maps even during the daily routine. We find them in the morning paper, where small black-and-white maps serve to locate and explain some significant contemporary event. At home in the evening similar colored maps face us on the television screen, for instance for the weather forecast.

In the early days of mapmaking, maps were simple in content, doing little more than locating coastlines, rivers, hills and settlements, and they were easily understood. Today, however, maps have become increasingly complex — due partly to improved reproduction methods and technology and partly to the wealth of information to be mapped — and they are therefore sometimes extremely difficult to analyze.

TEACHING MAP USE CONCEPTS TO CHILDREN

Ferjan Ormeling

Introduction: From the landscape to the map and back again

The scheme in [the] figure shows how part of the Real World will be represented, via sequences of invisible and digital models, in visible graphical images. Through observation of our environment we form a mental landscape model. When we want to convey this to others we will plan in our minds how to visualize this. In doing so we will probably use some common notions or conventions and represent the relevant data in the form of a map. Nowadays we can be assisted by a computer which we can feed with digital data about the environment we consider relevant. We can structure the relevant files into a database (digital landscape model) from which, in turn, we will select data and transform them into a digital cartographic model, and visualize this through the use of a graphical processing language such as Postscript.

(A)perception of the Maps by Czech School Children

Milan KONEČNÝ and Josef ŠVANCARA

Introduction

In the recent years a number of remarkable results have been achieved both in cartographic technology and in the didactic procession of the subject matter of geography, but it cannot be said that the broad public now has acutely better cartographic products and a better understanding of maps. On the contrary, in recent publications evidence of this sad state can be found. At the time of the military conflict in the Persian Gulf it was observed that a number of TV viewers did not understand many of the maps employed to portray the evolution of the conflict (Lindgren, P.C., 1991). Mother investigator found that many persons are not able to use maps during a state of emergency, such as after the passage of a typhoon in some regions of the U.S. (Dymon, U.J., 1993). Also, it has been observed that in some natural disasters, such as floods in the Netherlands it appeared that it is necessary to pay attention to the instruction in orientation on the basis of maps and/or their utilization together with further new technologies, such as GIS. Obviously, education and training in the use of maps should begin in the early school years and be progressive as students mature and gain greater capabilities.

MAPS FOR CHILDREN ON THE WORLD WIDE WEB

James R. Carter, Ph.D.

Introduction

The focus of the Map Use Commission is on how individuals use maps in the many environments in which they occur. In my current thinking there are four dimensions to map use:

- 1 - the individual user
- 2 - the map use environment
- 3 - the map use task
- 4 - a user community for each of various types of maps.

For this study, children make up the population of individual users. As such these users range from young children who have few concepts of the earth, regions, spatial representation, scale, direction, and symbolization to older children who may be quite comfortable using some types of maps in the pursuit of knowledge or in the exploration of their environments, be those environments local, regional, global or extra-terrestrial. Some individuals irrespective of age have various visual or mobility impairments which impact on their ability to use maps. In total, children are a diverse group of map using individuals. But, they stand apart as a group because their youth has limited their opportunity to gain knowledge of the concepts and themes represented on maps and the experience of working with maps.