MUNICIPAL ATLAS AS A RESOURCE FOR UNDERSTANDING THE WORLD

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Abstract

This work has as its objective to discuss the validity of a semi-elaborated Geo-Cartography Municipal Atlas for environmental education (7 to 11 – year – olds) as a tool to understand the world. We believe that these learning-by-doing activities can help young students become cartographically literate and also surpass empirical knowledge, studying Geography as a science.

Studies about Geography teaching quality in elementary schools (7 – 11 year old students) concern:

- university education and training programs for almost all teachers of these age classes;
- the unavailability of didactic materials to teach local Geography;

State and Municipal Education Secretaries have made efforts to produce materials to help teachers methodologically with training programs.

We need to think about Geography teaching (7 – 11 – year - olds) seriously to find solutions to improve its quality. We need solutions to improve the quality of university education and have training programs for teachers. We also need materials that allow contents of local Geography to have seriousness and depth like a science. It is necessary that local Geography crosses from common sense to Geography science using concepts, theories and analyses.

The new Basic Educational Law, signed in 1996, opens the possibility of improving the quality of elementary school education because it determines that all teachers have to have a college degree by 2007.

But today, these teachers do not have a college degree, so they do not have specific knowledge in Geography science. They teach math, science, history, language, art, etc. In addition, they do not have enough knowledge about teaching theories and methodologies.

Therefore, these teachers do not have:

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- materials about local Geography,
- enough ability to use local Geography references with their students,
- skill to observe and raise geographic elements in field studies and in documents to make maps and graphs.

Teachers who work with students at these ages should have as an objective the development of skills and the creation of circumstances to construct Geography concepts that are foundations for later classes. In order to this, teachers have to have specific knowledge in Geography, Cartography and Methodology to teach both contents and skills well. Construction of this Municipal Atlas is intended to help teachers, in their work with young students, teach Geography with local information. It is based on the methodological proposal: "make and understand", developing the abilities of teachers and students to investigate. In this way, we will have researcher-teachers **and researcher-students too!**

I - Atlas Contents

The Municipal Geo-Cartography Atlas for Environmental Education is an active didactic resource for two reasons:

- the work in searching for Municipal information
- learning investigation methodology in Geography

The Atlas has been organized in the following form:

A – Cards with basic local Geography information: soil usage**,** population, factory production, rural production, phone network, water system, energy system, circulation of goods and services, people, knowledge, and money.

B – Divided into two parts:

- Basic municipal map
- structure of graphs and maps to make

C – Orientations to work with:

- field studies to collect data
- take photos
- work in the classroom to analyze, classify and treat the data
- construction of maps and graphs

The form: Methodological proposal

This didactic material has as its main objective to be a resource for students and teachers to learn through practical experiences how to investigate and construct Geography knowledge. It presents a collection of cartographic cards where both teachers and students have active and effective participation in the process of constructing geography knowledge about their municipality.

With the given information, student's empirical knowledge about their space will be questioned. Questions arise as challenges to show the need for investigation. Teachers and students will be partners in finding answers to their

questions and could reconstruct their knowledge using their historical references. Concrete experience in field (data collection) is very important to the quality of Geography learning - the construction of relationships between representations, theories and concepts and reality.

These methodological ways give students the possibility to compare information first given in the cards: written documents, maps, old photos, aerial photos taken at different times, and real space observation. We believe that it gives students and teachers the possibility to improve the analysis and comprehension of their municipal space. Written language, graphs and pictures would be used at all moments of investigation:

- first reading to know the information that exists: written documents, photographs, aerial photographs, maps which represent different times
- identification and search for problems in the field
- communication of research results
- discussion of problems and possible changes

Students would be co-authors in this Atlas elaboration, complementing the proposed exercises with their research data. This effective /real participation in the search for information gives students the possibility to learn geography concepts and content with meaning. They also learn scientific research methodology.

The national Geography curricula guidelines propose working with concepts of landscape, region and territory. However, according to Psychology researchers, without local concrete references, students at these ages do not construct these concepts.

The same national Geography curricula guidelines reference proposes environmental study as a theme that would work for all sciences to improve the quality of life in the world – nature, society, and their relationship.

THE MUNICIPAL ATLAS OF GEO-CARTOGRAPHY for ENVIRONMENTAL EDUCATION

We believe that this Atlas helps students and teachers to learn with meaning and understand their living space. Mainly to develop attitudes of investigation and improve the construction of territory, landscape, and region and other structures to understand Geography science in a step-by-step way. The proposal to read living space, collecting and classifying data with an environmental approach gives opportunity to students to perceive problems. They investigate in order to determine individual, collective, public and private responsibilities and construct a conscientious commitment to the environment.

To know geographic space through the collection and analysis of data is to treat the environmental question with responsibility. Data analysis and its representation - photographs, graphs, maps and drawings - is a language to express results of investigation and the possibilities to interpret reality and classify problems using geography categories like risk of land use, water quality

in urban and rural rivers, air quality, etc. This work goes through to the next step of cartographic language usage - Environmental Cartography, drawing the synthesis map where the collected and analyzed questions are represented. The exercise, which advances step by step from collecting the elements until its finalization on the synthesis map, is a real reconstruction of knowledge so that students “re-mean” their known space empirically in analyzed and understood space. Observing this representation, where the problems appear in order, it is possible to discuss an alternative form of soil usage, thus thinking about an environmental program to reverse the reality. It is in this form that we understand the Environmental Education Program, which goes beyond the school, beyond common knowledge and mainly develops ecological consciousness - observe, understand and propose.

We believe that Graphic Representation (maps and graphs) is a resource of unquestionable validity as a language which permits the subject to read, represent, analyze and reconstruct geography knowledge about represented space. Geography knowledge is a tool to read the world with meaning.

Understanding reality with this focus takes more than just reading landscape elements. Geography thinking which concerns analyzing relations contributes to the development of intellectual autonomy and encourages subjects to think spatially and to change their space.

Researchers of cartography for students have questioned the geographic knowledge produced by students at these ages. Passini (1994),. Almeida (1994), Oliveira (1990), among others research problems about content and form of Geography in the classroom, in particular in the elementary school classroom. Oliveira (1990) also pays attention to the mass production of textbooks. And the real situation of the teachers gives more force to this industry. Teachers who have no special knowledge in Geography depend on all of these materials to plan classes, choose exercises, study with content, find answers to questions and value constructed knowledge. Passini (1994), Nosella (1980), Faria (1984), among others have made social studies textbook analyses (ages 7 – 11) and have written that there is a lot of confusion about concepts and fragmented knowledge without scientific treatment of contents. Cartography lessons are not like a language and a tool to understand Geography better, but like an isolated illustration. There are errors on the maps and graphs in the methodology and an explanation of this specific language is absent.

A proposal to teach learning to learn Geography as a Science:

Consider what we presented above about the knowledge and abilities of teachers who are not specialists in Geography science and do not have skills for field work and document investigation;

Consider it important that students use their empirical knowledge as a reference about their quotidian space to re-construct it geographically;

Consider that we have a very short bibliography about Municipal Geography;

Consider that we have limited maps with municipal questions on a detailed scale;
Consider that we have a limited bibliography about municipal environmental questions;
Consider it important that students at these ages (7-11) are map makers to develop skills as map readers;
Consider that this is the construction of the study methodology, the atlas a guideline for teachers and students to give them a possible way to teach and learn Geography Science.
This is also open to interdisciplinary work:: Math, Biology, Native Language, Foreign language, History, etc. For example, with respect to the theme of land occupation, we have to consider its historical process. We put former and current photos side by side, maps of the founding of Maringa alongside a current land use map. To study these representations as documents is important for scientific research: reading, discussing, having hypotheses and doing field work to confirm if soil use is organized in an environmental approach or not, if the historical process explains the entire land use and if there are social divisions for spatial organization. These are some questions to discuss or to propose to students to challenge them to investigate.
We also provide some written texts to help and promote discussions with serious content, not only common sense.
The atlas study also provides the possibility to construct a link between University and classroom teachers (elementary and high school). This work, in collaboration with researchers and primary education teachers, is very important to improve dialogue that is necessary for improving both who researches and who practices. This partnership of teachers and students of primary and secondary school and university teachers is important in order to have researchers focus on reality and discuss methodology and material production with the “real” subjects of teaching and learning Geography.

Key words: Municipal Atlas for students, cartographically literate, map-making

BIBLIOGRAPHY
ALMEIDA, Rosangela Doin de (1998) Atividades cartográficas (4 volumes). São Paulo: Atual.
ALMEIDA, Rosangela Doin de (2000) Atlas de Limeira: estudos geográficos e ambientais.
ALMEIDA, Rosangela Doin de (2000) Atlas de Ipeúna.
ALMEIDA, Rosangela Doin de e PASSINI, Elza Yasuko (1989) Espaço geográfico: ensino e representacão. São Paulo: Contexto.
BERTIN, Jacques (1986) A Neográfica e o tratamento gráfico da informação. Curitiba: Ed Universidade Federal do Paraná.

BONIN, Serge (1986) Réflexions sur l'utilization de la cartographie dans l'enseignement primaire e secondaire. Documentation Pédagogique, L'information Géographique.
CARRIERE, Jean.
GOES, Maria Ceília R (1993) A linguagem e o outro no espaço escolar. Campinas: Papirus.
HALLOWAY, G.E.T. (1977) Conception del espacio en el nino según Piaget. Buenos Aires: Kapelusz.
HANNOUH, H. (1977) El nino conquista el medio: las actividades exploradoras en la escule primaria. Buenos Aires: Kapelusz.
LE SANN –
LE SANN, Janine (1998) Atlas escolar de Gouveia. Belo Horizonte, UFMG.
MACEDO, Lino (1994) Ensaios construtivistas. São Paulo: Casa do Psicólogo.
MACEDO, Lino (s/d) O Funcionamento do sistema cognitivo e algumas derivações ao campo da lietura e escrita. São Paulo, IPUSP/mimeo.
MARTINELLI, Marcelo (1998) Mapas e gráficos: construa-os você mesmo. São Paulo: Moderna.
MOLINA, Olga (1992) Ler para aprender – desenvolvimento de habilidades de estudo. São Paulo: EPU.
NIDELCOFF, Maria Terezam(1987) A escola e a compreensão da realidade. São Paulo: Brasiliense.
OLIVEIRA, Lívia de (1987). Estudo Metodológico e cognitivo do mapa. São Paulo: IG, USP, Departamento de Geografia.
PAGANELLI, Tomoko Yida (1993) Estudos Sociais: teoria e prática. Rio de Janeiro: ACCESS.
PASSINI, Elza Yasuko (1994) Alfabetização Cartográfica e o livro didático, uma análise crítica. Belo Horizonte: Editora Lê.