

EDUCATIONAL RESOURCES OF THE NATIONAL ATLAS OF SPAIN

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1.- Introduction

The National Atlas of Spain is a powerful tool to get to know our country. The target audience of the atlas is very broad: it embraces from laymen and teachers, students and experts in any of the subjects related with the atlas, with heterogeneous profiles and different needs.

In an extensive survey, geography teachers were asked about the actual use of the printed national atlas in classroom and the completeness of educational resources available on the Web. The survey attests that, firstly the maps of the current printed atlas are sometimes so complex – above all at lower secondary level-, secondly that some of the contents must be updated and, thirdly, there are not quality products based on cartography for the teaching of geography on the web.

The National Atlas of Spain is addressed to different groups, users in general, geography teachers and university students. The fact is that students at different educational levels do not have the same skills in reading, understanding and analyzing the maps.

Many maps are very dense and complex. Sometimes, the graphic design is not well succeeded. Moreover, the National Atlas of Spain is confronted with disadvantages of printed atlases in general: an obvious one is the decreasing topicality of the content just after publication.

These facts as well as other aspects make it necessary to develop and implement two educational resources on the National Atlas of Spain website: “Population in Spain” and

“Spain through maps”. These projects have been undertaken by the National Geographic Institute of Spain (IGN) and the National Centre of Geographic Information (CNIG) in collaboration with the professors of the Zaragoza University for the educational resources about population and the Association of Spanish Geographers for the another project.

This article will focus mainly on the analysis and implementation of the resource "Spain through maps".

2.-Objectives

The Educational Resources of the National Atlas of Spain (SNA) aims to promote the usefulness of the contents of the ANE in the teaching field. These resources from SNA are classified according to their use (on different educational levels in Spain: primary school, secondary school and university) and provide with educational tools to search through the catalog on the Web.

In a first approach, these resources could be just a repository of content classified according to the level of education but without any pedagogical adaptation. That is the case of the didactic project “Population in Spain.”

In a second approach, these resources can be part of an ambitious educational project in which the selected contents are adapted according to users’ needs and objectives, identified in the teaching guide, and complemented with other resources such as activities, assessments, glossaries, links of interest and so on. That is the case of the didactic project “Spain through maps”.

Initially, the educational adaptation is centred exclusively on the teaching of Geography, although in future it could be enlarged on other phases to other fields such as History, Natural Sciences, etc. since the National Atlas of Spain has information of quality for it.

We can highlight the following goals:

- To synthesize the general keys of the Geography of Spain through a group of thematic maps on two reference scales: state and autonomous regions.
- To carry out a design of quality of the educational resources website.
- To combine the cartographic information with procedures and activities that encourage the student self-teaching.

3.- Methodology

Considering the mentioned goals and critical points, the department of Thematic Cartography and National Atlas of the IGN decided to start a new project for a repository of educational resources on its institutional web: <http://www.ign.es/ign/es/IGN/ane.jsp>

To guarantee the usability of the “Educational Resources”, the guidelines from the professors of Zaragoza University for the educational resources about population and the Association of Spanish Geographers for the another project were taken into consideration.

The methodology is as follows:

- Analysis of the current situation of the digital educational resources available on the Web and accessible for professors and students.
- Detection of the lack of cartographic content existing in these educational resources.
- Selection and classification of the geographical information (maps, images, graphics, figures, texts, etc) available in the National Atlas of Spain for different educational levels.
- Pedagogical adaptation and in some cases, updating of the thematic cartography of the National Atlas for the educational levels.
- Creation and organization of the rest of the educational contents that are parts of the final product (maps, graphics, animations, texts, figures, activities, etc.)
- Web design and implementation of each educational resource (“Population in Spain” and “Spain through the maps”) inside the IGN/CNIG website linked to the National Atlas website. The product design takes into account the guidelines for accessibility and usability of services and electronic products for the general administration of the state

4.- Description of each educational resource

4.1.- Population in Spain

This resource presents an analysis of the Spanish population, its distribution and organization, as well as the characteristics of different geographical spaces (autonomous regions, provinces and main Spanish cities).

The contents that have been selected from the monograph of the National Atlas of Spain dedicated to Demography are divided into three thematic groups: Knowledge of territory, Europe and Spain.



Figure 1. Table of Contents for the Primary Level

Each topic is divided into different themes which are illustrated with maps, fact sheets explaining the maps and the graphics.

The screenshot shows the 'La población en España' web application. The header includes logos for the Spanish Government, the Ministry of Development, the National Geographic Institute, and the University of Zaragoza. The navigation menu on the left has buttons for 'Primaria', 'Secundaria', 'Bachillerato', and 'Universidad'. The main content area is titled 'Estructura y composición demográfica' and contains a table with the following data:

Título	Ficha	Gráfico
Ámbito	Fecha	Mapas
Población menor de 15 años		
Provincial	2006	
Población de 65 años y más		
Provincial		

Below the table, there is a detailed fact sheet for 'Población menor de 15 años' and a map of Spain showing population density of children under 15 in 2006. The map uses a proportional symbol legend where the size of the circles represents the percentage of the population under 15 years old. The legend indicates that the size of the symbol is proportional to the number of people under 15 years old, with a scale of 0.1 to 17 x 10^4 hab. The map also includes a scale bar and a north arrow.

Figure 2. Materials for the topic "Population under 15 years old" (Educational level: Primary; Thematic group: Spain, Theme: Structure and Demographical Composition)

This resource is accompanied with a powerful web search engine that allows the user to find information following different criteria: literal (by title of map or graphic) and advanced search (by geographical areas, educational level, year of data and topic).

4.2.- Spain through the maps

This resource is conceived as a synthesis of the general keys of Spanish Geography presented through a group of thematic maps. The material is organized in four thematic groups: territorial organization, environment, occupation and territorial processes, and territorial unbalances. The following table shows detailed structure and content of thematic groups and modules.

THEMATIC GROUP	MODULE	
	GENERAL LEVEL	BASIC LEVEL
Territorial organization	World	
	Europe	
	Spain	
Environment	Occupation and territorial processes	Relief
		Climate
		Hydrology
		Vegetation and soils
	Natural and cultural heritage	
Environmental issues	Natural hazards	
	Pollution and Waste	
Occupation and territorial processes	Recent territorial changes	
	Farming and fishing	
	Industrial activities	
	Business activities and leisure	
	Tourist Activities	
	Transport and Communications	
	Cities	
	Population	
Territorial unbalances	Administrative territorial unbalances	
	Demographical territorial unbalances	
	Economical unbalances	
	Unbalances in the knowledge society	

Table 1. Table of contents

Teaching guides, a glossary of geographical terms, links and the access to structured content in thematic groups are available on each educational level.

The teaching guide has the following headings: objectives, content, methodology, and evaluation activities. It is oriented to the teacher and shows the guidelines to use this resource. The section of the contents, oriented to the student, combines cartographic information and procedures to work with.

Within each module the user has access to the following information:

- Explanatory text: Text that displays the keys and the general topic that are linked by connecting the rest of the elements (maps, graphs, statistics, pictures, events, etc.).
- Central map: It is the synthesis of the topic. For example; in the territorial organization of Spain the map of the regional administrative division.
- Additional materials: It includes all necessary maps to analyze the central or core map. It also includes artwork (charts, tables with simple statistics, pictures, animations, etc.)

- Specific activities, evaluations and suggestions in order to deepen different thematic approaches.



Figure 3. Overall structure of the secondary education level on the web.

This educational resource offer in total 118 thematic maps, 92 graphs, 60 sheets, 55 animations and more about 100 figures. Every content can be browsed and downloaded free.

Many of these resources can be used directly in the classroom or will be useful in classes or demonstration activities preparation, or as resources for teacher' training and curriculum development.

GOBIERNO DE ESPAÑA
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AGE

Información General Inicio > 2º Bachillerato > Organización Territorial > España 4/7/2009

Descargas
Mapa de la Web
Guardar Sesión
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ESO

2º de Bachillerato

Glosario

Enlaces

Organización Territorial

La organización territorial de España

Descargar / Imprimir Abrir Leyenda

COMUNIDADES AUTÓNOMAS

Materiales Complementarios

Mapas
Gráficos
Figuras
Fichas
Animaciones
Actividades
Evaluación

La Constitución de 1978 define **España** como una nación integrada por nacionalidades y regiones, con capacidad de autogobierno. El texto constitucional no definió cuáles debían ser dichas nacionalidades y regiones, pero estableció el procedimiento para que, a partir de las provincias existentes, pudieran formarse las que se denominarían Comunidades Autónomas, que podrían estar constituidas por una o varias provincias.

Figure 4. This figure represents the basic level of each module.

5.- Results and conclusions

As a result of this work, we have two educational resources on the National Atlas of Spain website.

Our purpose is to continue working on the projects deepening and broadening them in different directions this line of products in future. Thus, the Geographical Information System of the National Atlas of Spain will make search of content by educational level, since each content of the Atlas will be catalogued.

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