

**INTRODUCING CARTOGRAPHY AND MAP-USE  
IN THE COUNCIL OF EUROPE'S PROJECT  
ON HISTORY TEACHERS' INITIAL AND IN-SERVICE TRAINING**

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### Summary

The initial and in-service training of teachers, especially in the domain of History teaching, it is of main importance, within the frame of the Council of Europe's Education Committee's actions contributing to the transition processes of its new member-states in the field of Education. In this paper it is presented a contribution offered by the Hellenic Centre for Maps and Cartographic Heritage in the above initiative concerning the importance of the use of maps and modern information and communication technologies in History teaching.

### Introduction

The Council of Europe's (CoE) Education Committee (CC-ED) is playing an important role in training of in-service teachers especially in the fields of History teaching. The projects developed are based on the CoE's principles and values for a peaceful and democratic co-existence of peoples in all its member states respecting diversities in culture and heritage. A particular interest is focused on areas of Europe where History teaching played or is still playing an indeed introversive role in the education systems characterised by partiality, isolation and "hard" statements concerning the "others". This approach in History teaching develops a not always positive environment which does not allow the elimination of eventual historical misunderstandings and the strengthening of mutual understanding and peaceful co-existence especially between neighbouring nations, which in the past suffered conflicts, pains and destruction. The CoE, in the frame of its CC-ED, is organising series of regional and local seminars and workshops dealing with the History teaching in order to avoid fanaticism and hate or the development of distorted image for the neighbour. Special care is also paid on the preparation of History handbooks used in teaching both from the writing and the publishing points of view. The Hellenic National Centre for Maps and Cartographic Heritage is contributing to these CoE's initiatives as far as the cartographic component is concerned regarding the use or misuse of maps in History teaching handbooks and in teaching process in general. In the paper, the

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philosophy, the implementation and the presentation of a special package of lectures is described. The package is designed for History teachers to whom the importance of maps and of the cartographic language is illustrated as well as the possibilities and the new horizons, which could be opened by the History teacher when uses maps properly in teaching History. Another part of the package is addressed to the History textbook publishers by stressing the communication problems and possibilities the properly designed maps can offer to the overall value of a History textbook. A main part of the package is the possibility of using maps and relevant cartographic material extracted from the WWW in order to be used in History teaching in the context of a modern electronic History lecture supported by the new digital presentation technologies. The paper discuss also some indeed positive actual examples and experiences gained from a number of Council of Europe's seminars and workshops on the matter, addressed to History teachers from the South-East European, the Black Sea and the Baltic regions. It concludes on how cartography and maps could broaden the map use in a delicate issue, as it is the History teaching especially in politically turbulent areas. The overall concern here is to show to the teachers why the designing of proper maps for History schoolbooks is a very serious question and not a trivial occupation for amateurs or non-experts or even mapmakers who think they are cartographers...

### **Maps in teaching History**

Even if the importance of maps in History teaching sounds a “sine qua non” issue, it is not always given that this importance is governing as a whole, the educational system, the formation of teachers, the textbook writing, the publishers concern and the teaching practice in general. In order to establish a general acceptance on the intrinsic importance of maps in History teaching a relevant policy-making system in this field should answer general and less general questions like the following:

- Is it possible to teach History without maps?
- How important maps are, in teaching History?
- Is it possible that maps alone could alternate historic facts or create «special» feelings?
- Is it possible to falsify history using cartographically correct maps?
- Is it acceptable to neglect the scientific and technological *cartographic requirements* in preparing maps for teaching History?
- How could *new information* and *communication technologies* contribute in modern History teaching? (*graphic-processing* and *visualisation*)
- What is the difference between *information* and *knowledge* in a History teaching process?
- What is the impact of *infographics* versus the stereotype text narration in gaining historical information?
- Is it possible to treat contradictory and “*delicate*” historical issues with *infographics*?

- Is the visual component a *catalyst* in History textbook-maps (in the *student - book relation*) or a minor element of negligible importance?
- What preparation and skills are required from the teacher for proper *map-uses* in History teaching? (Considering also the NICT factor)
- What could be the advantages of the *interactive* and/or *caned WWW*-use for the map related part of History teaching?
- Can logistical limitations be the excuse for *graphically poor* textbooks or is this a question related to a *certain culture, missing expertise* or *professional conflict of interests*?
- How place-names (toponymy) should be treated in History schoolbooks?
- Should be the driving force in designing History schoolbooks, the style and the capacities of the new generation, in perceiving visual information?

### **A basic cartography course for History teachers**

#### *The foundation*

The importance of using maps in History teaching is based mainly on two factors:

- a. On the finite visual ability of the human being to perceive globally the whole, not only of the surrounding earth space and surface but also of its own body. This human limitation in perceiving visually the entire geographical space is the reason why humans felt the need to represent first in graphical form (ca. 30000 b.C.) the surrounding environment much before writing.
- b. On the cognitive value of the Representation (writing, drawing, mirror, picture, image, map) which is among the basic elements contributing to the cognitive evolution of a child together with Alphanumeric (letters and numbers), Sounds (music, oral language), Motion (body control), Association (social behaviour), Objects (sizes, shapes, functions, colours) and Space (topology, position, distance, direction).

The above two factors, the human “visual perceiving paradox” and the “cognitive value of the representation” are the fundamental pillars on which a general theory on the educational use of maps can be established and as a by-product, on the use of maps in History teaching.

#### *A course design*

A basic cartography course designed for a short training of History teachers could be based on some main items among which we can include the following:

- The *cognitive value* of the visual representation
- Some *cartographic History* about maps referred to the pre-Hellenic civilisations, to the Classical Greece, the Roman and Hellenistic periods, the Medieval era,

the Renaissance, the Enlightenment, the Modern era, the 20<sup>th</sup> century and the “Digital Earth” era. Since we deal here with a European project, the weight is put on the European historical component without ignoring the relevant non-European cartographic heritage. Special care is paid on the proper use of old –historic- maps as supporting illustrations in History teaching, for to the misleading effects they could cause due to the large spatial deformations induced by the cartographic deficiencies of the old times.

- Elements from *map-theory* including the distinction between the *geometric* and the *thematic* components of the spatial description and representation and a general definition for the “Map” as a graphical carrier *representing* geographic areas under controlled *deformation* and *scale*, depicting *Themes* (e.g. here, History) spatially distributed using *codes* for *visual communication* on proper *media* (e.g. *paper, digital file, screen, memory*). Further, the concepts of *projection* (the concept of the straight-forward geometric development of the sphere onto a plane and the mathematical representation process), *deformation* (induced by the projection) and *scale* are explained, the latter as an operator regulating and/or conditioning the metric tolerance of the representation, the degree of detail –reducing or expanding the area of interest. The special topic of generalisation is also treated with examples in order to understand the need of application both in the context of constrain but also of proper intension.
- Ordinary functions of maps, with emphasis on the *communication* issue and the low noise requirement for the *visual signals*. The main functions of maps in teaching History is for:
  - a. The *narration* of History using maps simply depicting events, i.e. nominal data (point, linear, surface)
  - b. The *elaboration* of History using maps depicting: complex and quantitative data and historical events requiring elaboration, *dynamic* –time dependent- historical data, *comparison* and *correlation* of historical data both in space and time, *classification* of data, *evaluation* of the events, etc.
  - c. The improvement of children’ s skills
- Maps as tools for *manipulation*, especially in Propaganda and in Falsification of History.
- The use of *infomaps* i.e. the implementation of *infographics* in cartography.
- Some actual examples from existing History schoolbooks, evaluating the cartographic and map-use component in these books. These examples should be more or less based mainly to a list of the following type, concerning, e.g.:
  - a. The profile (specialist or not) of the author and the designer of the book’s cartographic content.
  - b. The things to be done more for a proper presence and quality of maps in History schoolbooks.
  - c. The preparation and the quality control of the cartographic content.
  - d. The respect of the –at least- major cartographic rules.
  - e. The proper application of the concepts of *infomaps* or *infographics*.

- f. The format of the books (size and shape) and the paper quality conditioning the cartographic illustration.

### **The expert' s concern**

#### *The preparation of schoolbooks*

The preparation of a History schoolbook in the context of its cartographic and map-use components, should be focused mainly into the following items:

- The selection of the proper *projection* and *scale* with respect to the historic theme to be represented cartographically. This selection should take in consideration the properties displayed above, namely the induced deformations due to the projection, the areal dimensions of the map to be depicted as regulated by the scale as well as the degree of the possible density of data represented by symbols.
- The evaluation of the historic thematic data quality, which should be done in co-operation with the historians.
- The processing of the relevant thematic data *for a balanced and attractive visualisation and Visual perception* with respect to the *generalization*, to the *symbols' typology* (point, linear, surface, 3d), to the compatibility of the *colours*, to the readability of the *lettering*, etc.

#### *The use of infomaps*

*Infomaps* is the term describing the use of maps in context of *infographics* i.e. the combination of “information” with “graphics”. Here it is important, for the educational value of the History schoolbook to clarify the meaning and distinct the use of the two key words, *Knowledge* and *Information*, especially when they are used in primary and secondary education. A possible definition of *Knowledge* could be:

- “*Knowledge* is the familiarity with a theme (e.g. History) gained by study and experience”.

On the other hand a possible definition of *Information* could be:

- “*Information* is the awareness about a theme gained by inputs of sets of data”.

Knowledge is a long-wave, painfully slow process, which means that it is a *low frequency* gaining mechanism. On the contrary, Information is a short-wave, painless fast process, which means that it is a *high frequency* gaining mechanism, remembering of course here that the communication channels are principally designed to transmit information! Implementing *infomaps* and *infographics* into a History schoolbook design, one should have seriously in mind the following factors:

- The cognitive value of the visual representation.
- The visual perception factor.
- The possibilities offered by graphical arts.
- The function of the art of the *message transmission*.
- The art of *attracting* the user of the schoolbook.
- The possibility of using printed and/or electronic *infographics*
- The volume and areal dimensions of the medium to be used (*page/ screen*)
- The availability of new information and communication digital products and means, e.g. multimedia, Cd-Roms, DVDs and last but not least the WWW.

### **The Thessaloniki experiment**

The Hellenic National Centre for Maps and Cartographic Heritage\* in the frame of its activities on the educational functions of cartography and maps is organising from 2000 an annual seminar addressed to in-service History teachers. The seminars on “*The use of maps, modern cartographic technologies and of the WWW in teaching History*” are fruitful results of the co-operation between the Centre, the Education Committee of the Council of Europe and the Directorate of International Educational Relations, Section of International Organisations of the Hellenic Ministry of National Education. In the two seminars organised until now, 20 in-service teachers coming from 12 Council of Europe’s member-states -Cyprus, Czech Republic, Estonia, France, Latvia, Lithuania, Malta, Romania, Russia, Slovenia, Turkey and UK (Scotland)- have been successfully trained. It is important to say here that the largest majority of trained teachers had no any special previous experience on the matters treated in the Seminar. Aim of this in-service training, designed, organised and implemented by the *Centre*, was to introduce teachers in the use of modern cartographic tools, electronically acquired maps and relevant images which are necessary to support History teaching. Since the physical domain of History is the geographic space, special care was paid in the role of geographical data and especially of geo-images. The participants were systematically trained on the importance of cartography and maps in teaching History and on the specific skills required today for such teaching. They were also trained in how to use new information technologies and the WWW in order to collect relevant data and to design and implement their own “electronic class-lecture”. Concerning the use of WWW as a modern source for on-line collection of cartographic data, a special discussion has been made on the reliability of such data with respect to the use and the misuse done by the relevant sites. Extended laboratory training was also offered to the participants assisted by the Centre's specialists and external academic staff from the Aristotle University of Thessaloniki, the Technical University of Milan and the University Institute of Architecture of Venice. The participants concluded the training by preparing and presenting an ad-hoc Powerpoint lecture totally prepared with the aid

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of the WWW. Modern digital facilities were available to the participants, namely five networked working-stations all with access to the web. The lectures were given electronically using multimedia projectors and the participants had full and unlimited access to the web. The Centre also offered its modern cartographic peripherals, e.g. data collection units (scanners / digitisers), plotters and printers giving the participants the opportunity to introduce themselves into a high-tech cartographic environment.

### **Concluding remarks**

The use of maps in History teaching at the level of primary and secondary education seems to be a challenging issue as actual experience has recently shown, especially in the frame of the Council of Europe's project on the in-service training of teachers. Of particular importance is also the CoE's concern for the History teaching in areas of Europe severely disturbed by the political events happened the last decade as well as many countries' intention and actions for the updating and revising the content of History schoolbooks. The "Thessaloniki experiment" presented here has shown how important it is to train teachers in how to use properly maps and relevant material especially in the new high-tech era dominated by the WWW and the possibilities offered by new information and communication technologies. This awareness concerns also the History schoolbooks authors, the publishers but also the cartographers and the designers dealing with the book editing. Needless to say that even if the History schoolbooks are properly written, edited and published as far as the cartographic component is concerned, it is still the teacher who is functioning as the power interface between the book and the student. It is thus, the teacher with her/his oral presentations and interpretations, with her/his style, preparation, cultural preparation, skills and ideological background, who at the end will influence profoundly the young students in perceiving History and develop views and behaviours through it. So, the teacher should be trained and prepared to use for ad-hoc oral presentations properly selected and carefully evaluated cartographic illustrations and relevant visual material in order to assist the students learning from the book. This process is indeed powerful especially today with the use of WWW and modern digital technologies for lecturing. Cartographers should play a decisive role in this field revisiting old concepts on school cartography, on teaching using maps, revisiting stereotypes from the map theory and trying to develop modern packages in order to support teaching with maps, either printed or electronic. The application to History teaching is highly fascinating, opening new ways to modern cartographic thinking.

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