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School Friendly but Demanding: National Curriculum Reform in Poland

Aleksandra Zaparucha

In December 2008 the Polish Parliament approved the introduction of the National Curriculum reform, which was co-financed with European Funds. It aims to increase the quality of education and build the Knowledge-Based Society in Poland. This is a strategic goal of the Council of Europe set in Lisbon for the entire EU in March 2000.

The reform implementation will start in September 2009 and it will take 8 years before the whole system is transformed (Table 1).

Table 1. Implementation Stages of the New National Curriculum in Poland

School Year	New Curriculum				
	Primary	Junior High	High School – different types		
			Comprehensive	Technical	Vocational
2009/2010	I	I			
2010/2011	II	II			
2011/2012	III	III			
2012/2013	IV		I	I	I
2013/2014	V		II	II	II
2014/2015	VI		III	III	III
2015/2016				IV	Complementary I
2016/2017					Complementary II

The foundations of the National Curriculum reform include the following:

- compulsory pre-school education for 5-year-olds introduced,
- pre-school education swiftly followed by school education,
- lowered schooling age (6-year-olds start primary education),
- 6-year post-primary education combined into one system,
- minimum 4 years of post-primary school for a complete general education,
- wide selection of advanced subjects for High School students,

- Junior High School Leaving Exam – continued with the additional foreign language exam,
- compulsory subjects for High School Leaving Exam – Polish, Mathematics (since 2009/2010), one foreign language at the basic level plus the subjects selected by students (at least one at the advanced level).

In terms of Geography, the main changes refer to the compulsory number of teaching hours (i.e. 45-minute lessons) and the contents taught at the education stages III (Junior High) and IV (High School). Table 2 presents both the old and the new system in respect of the teaching time.

Table 2. Teaching Geography in Old and New Curriculum

	The Old Curriculum	The New Curriculum	Changes
Junior High	Classes 1-3 – 120 lessons		No change
High School (ordinary)	Classes 1-2 – 90 lessons	Class 1 – 30 lessons	- 60
	Class 3 – Leaving Exam – minimum 60 lessons	<i>Q: How can these students join Leaving Exam preparation classes after Class 1?</i>	
High School (advanced)	Classes 1-3 – 150 lessons plus 60 lessons for Exam preparation [210]	Classes 1-3 – 270 lessons	+ 60

As presently publishing houses can create their own textbooks, the organization of the contents varies. Table 3 presents the contents of the textbooks published by the Association of Polish Adult Educators according to both the old and the new National Geography Curriculum.

Table 3. Geography Content Organization

Education Level	Class	Possible organization of Geography contents	
		The Old Curriculum	The New Curriculum
Junior High	I	Physical Geography Human Geography World Countries	Physical Geography Europe
	II	Europe	Poland and its Neighbours
	III	Poland	World Countries – Case Studies
High School	I	Physical Geography Human Geography	Changing World
	II	Human Geography Changing World	Exam Preparation
	III	Exam Preparation	

Changes viewed as positive:

1. Less material taught in the same time span (so far the Curriculum has been criticized for being overloaded).
2. Longer Leaving Exam preparation, which should lead to a better exam preparation and better education level among those who select the subject.

Changes viewed as negative:

1. Lower number of compulsory Geography classes, which may result in a lower level of general knowledge of the subject among the society.
2. High School Geography teachers will have to face a possible drop in teaching hours, as this will depend on the number of the students taking the
 Geography Leaving Exam.

Questioned changes:

1. No compulsory revision of the material already done in Junior School.

No doubt the fast development of the Information and Communication Technology (ICT) has brought great changes in the way we work and live. These innovations

have touched all the spheres of human activity, including education. As human and social capital is an important element of modern societies, the transformation into the new Knowledge-Based Society is a must. However, it remains to be seen whether all this will move Geography into the future or whether it will be a step backwards.

Based on:

Knowledge Society

http://ec.europa.eu/employment_social/knowledge_society/index_en.htm

Ministry of Education

http://bip.men.gov.pl/akty_prawne/akty_prawne.php#rozp_23122008

Association of Polish Adult Educators – Junior High and High School textbooks

How is your country moving Geography into the future? Germany

Daniela Schmeinck

The development of “Bildungsstandards” is important for each subject for both the guarantee of quality (Qualitätssicherung) as well as for the further content related development of the subject.

For some of the school subjects the Secretary of the Constant Conference of the Ministers of Education and Arts of the Federal States of the Federal Republic of Germany (in German: Ständige Konferenz der Kultusminister der Länder der Bundesrepublik Deutschland – Kultusministerkonferenz (KMK)) has provided these papers. Geography as a school subject was not implemented in this Nevertheless geographer as well as geography educators and geography teacher are convinced about the need for developing such standards also for Geography. The German association for Geography (in German: Deutsche Gesellschaft für Geographie (DGfG)) has therefore worked out similar Standards for Geography. The standards are to ensure and develop the quality of the educational processes, to give a homogeneous fundament to the various German geography curricula and to position Geography in the educational-political context.

The final document is available online as well as in a printed version.

In October 2008 the Secretary of the Constant Conference of the Ministers of Education and Arts of the Federal States of the Federal Republic of Germany (in German: Ständige Konferenz der Kultusminister der Länder der Bundesrepublik Deutschland – Kultusministerkonferenz (KMK)) has provided a German wide common framework for content related Standards for the subject and didactics in teacher training (in German: Ländergemeinsame inhaltliche Anforderungen für die Fachwissenschaften und Fachdidaktiken in der Lehrerbildung). The document is the result and the consequence of the implementation of a bachelor and master degrees into teacher training. It offers the possibility to compare and evaluate degrees from different universities and works as a guideline for the accreditation of new teacher related study courses.

How is your country moving geography into the future? – Poland

Danuta Pirog

Nowadays Polish geography as a scientific discipline is experiencing a crisis. The contemporary condition of Polish geography is an effect of our history, especially a specific kind of treating of science during the communist system. A long-lasting isolation from a free exchange of scientific discussions and lack of publishing research on an international forum, slight expenditures on scientific research in the country, censorship etc., meant that apart from significant outputs of Polish geographers their studies either are unknown abroad or they don't meet international standards and they don't answer demands of society in XXI-st century.

Therefore after 1989 when a new political, social and economic reality occurred, the situation of science has also started to change. The new generation of researches, educated in circumstances different from those of their predecessors, has lead to new opportunities and aspirations. These changes caused important discussion on how can we move geography forward? This long-term discussion, which is still alive, has produced some noticeable steps, which should move Polish geography forward.

These steps are:

1. The broadening of the cognitive level of geography and the undertaking of new fields of research.

This pluralism demonstrates itself in the emergence of new disciplines in Polish geography. These are: geography of trade and services, medical geography, geography of tourism, geography of pilgrimages, geography of sport and electoral geography.

These scientific fields could not been developed before mainly because of political reasons. It is impossible to conduct research in the sphere of electoral geography, for example the level of activity of different demographic structures if there are no democratic election in this country. It is also difficult to conduct research into the main streams of pilgrimages when people can-not freely subscribe to their religion.

2. The broadening of the methodological level.

This step is visible in Polish geography in going away form only statistical, quantitative methods and starting to include some qualitative methods into their studies. This trend is especially visible in humanistic geography and the ecology of the landscape.

3. Intensification of usefulness of geography as a science

Polish geography as a science has some traditions in this field, for example geographers have worked on every administrative division in Poland which last time was in 1999. Nowadays the results of geographer's research are often used in

creating the concept of spatial development plans on different levels. Another important step in developing geography for the future is conducting works on monitoring the environment, preparing several analyses for people connected with crisis management and the architecture of landscape. Geographers also see the future of geography in using modern satellite technologies for a modern navigation not only for private people but also for public utility services, for example: ambulances.

4. Intensification aspirations for making up for some delays in computer technologies

GIS in Polish geography is one of the youngest and resilient disciplines. Before 2000 there were no GIS courses during geography studies. There was only a course called computer techniques, because the output of Polish geographers in this area was not large. At the beginning computer techniques of spatial analyses served for collecting environmental data. Nowadays these simple techniques have transformed into GIS which now in Polish geography means collecting, transforming, actualizing and analyzing of geographical spatial information, which means the management of this information. So GIS in Polish geography has evolved from the tool of making digital maps to the system of rich information which are accessible and used by geographers managing the environment. GIS is now a very important stream of scientific research and an important academic course.

5. Increasing concern over the position of school geography.

More and more often Polish scientists start to appreciate close relationship between the situation of geography as a science and geography as a school subject. In the time of transformation geography as a school subject lost its importance on the list of all subjects. One of the proofs of this situation is the withdrawal of geography from the primary school and replacing it with science. Another proof is the small number lessons in geography in the gymnasium and lyceum stage. The first significant step for an improvement of this bad situation was fighting for geography as a GCSE subject. Now geography is one of the most popular subjects among students. It is a big merit of geography teachers which are better and better prepared for their job. In Poland (for example in Pedagogical University in Kraków) there are several research projects connected with the quality of competences of students who are going to be teachers. This kind of research helps to modernize the process of studying. The Polish Geographical Society (PTG) organizes every year a country-wide geographical contests for secondary students. It helps to instil real enthusiasm for geography in the country and gives them an opportunity to compete with peers from other countries.

6. Adapting higher geographical education to the needs of the labour market.

This process of adaption caused many universities to offer full time and part time, and post-graduated students several new specialities. The most popular specialities are: tourism and recreation, the base of enterprise, spatial development, protection of the environment. Each speciality has a few modules. This variety means that

geography studies are still quite often chosen by young people and it increases their opportunities on the labour market. Also almost every university offers PhD courses.

7. Using the offer of the EU in the sphere of scientific studies.

This sphere is still one of the weaknesses of Polish geography because only a small group of scientists uses EU programmes for their research. There are a few reasons for this situation. One of this is our lack of experience in this area (we have been EU members since 2004). Another one is that there are many very good specialists who don't speak foreign languages on such a level which is indispensable for scientific discussions, preparing papers, following discussions on the international web-sites. The time to making up for these backlogs is needed. There is another group of Polish geographers who don't believe that their project can be accepted because earlier projects were rejected.

8. Polish research on the Philadelphia List.

This is also a new sphere for us and is a very important and essential way of moving Polish geography forward. These publications are quite rare so far. The reasons of such a situation are similar to the reasons presented above. There are not a lot of libraries in Poland where scientists can read all the foreign papers they need. It is still very expensive for Poles to buy these papers individually. Additionally for 4-5 years in most Polish geography departments scientists started to be rozliczany papers published on the Philadelphia List and these papers are very high estimated (from 10 to 25 points) meanwhile the same paper published in Poland gives him from 1 to 4 points.

It is obvious that this process will be rather long but it is very important link in the moving forward of Polish geography.

How Finland is moving Geography into the future?

Eila Jeronen

The need for distance learning possibilities in a sparsely populated country such as Finland is great. As education has begun to shift from the traditional classroom to the technological web, more and more eLearning courses have become a part of the curricula both at schools and in universities. The value of eLearning lies in its flexibility in the delivery of course material (Khalifa & Lam, 2002). Students are allowed to learn in their own way to determine their own path through the material available (Barua, 2001) and to learn things at their own pace (Chen, 2002). We should create material which supports the development of independent study skills and helps students in their individual and autonomic studying processes. The potential benefit of understanding how attitudes and conceptions of students fit teaching ideas is enormous.

The methods of delivering an eLearning curriculum and the resultant teaching processes are complicated. They are new and very different from those used in traditional class teaching. Influential factors for eLearning processes are the ICT infrastructure such as computer labs and access to the network, management support, and the school culture. In addition to the university and school teachers' own readiness and their preferences for meeting face-to-face, the students' and their parents' preparedness are also crucial. Student preparedness includes the items related to students' and parents' preparedness, as well as access to the Internet; and teachers' preparedness includes the items related to teachers' willingness and degree of readiness for ICT – and also for other new teaching strategies and methods in Geography education. To move our educational practices forward, we will need an understanding of the students, as well as a willingness to experiment with new teaching and learning models. Teachers' pedagogical skills, attitudes, and general competences vary a lot, and the pedagogical skills and ICT skills of the university and school teachers need constant reinforcement and updating. Kankaanranta (2005) has written

“Innovative Finnish classrooms should promote active and independent learning and provide students with competencies to search for, organize, and analyze information, and communicate and express their ideas in a variety of media forms. The innovative classrooms engage students in collaborative, project-based learning in complex and real-world problems”.

There are a small number of educational collaboration projects between Finland and other countries. These kinds of projects are important when promoting cultural understanding, cultural sensitivity and intercultural competence among participating students and teachers and the establishment of international network by means of new information and communication technologies. Consequently, it seems that the most viable way to achieve desirable educational goals is through building up a network of resources and expertise as well as encouraging collaboration between students and teachers at a global and local level. It is also important to open up the classrooms to external influences in various ways, especially through involving different participants such as parents, scientists, and business professionals in the daily work of schools. Nevertheless, the schools themselves have to make an effort to ensure the continuous development of infrastructure and pedagogically relevant use of ICT (Kankaanranta, 2006). Robert B. Kozma (2005, p. 133-134) argue that Finland's educational approach is successful, because it is based on broad and decentralized decision making and collaborative knowledge creation. It is also characteristic of the Finnish approach that decisions on the curriculum and instruction are made by local schools and teachers. Kozma continues his analysis in saying that this kind of distributed effort is coordinated by the vision of a Finnish information society, in which technology and information sharing support economic growth and social development.

Future research should focus more closely on examining the reasons behind, and the factors motivating, the enjoyment of teaching, studying and learning Geography. There are also other important questions which need to be addressed. One of those is: what exactly do we know about the learning processes and the results of technology-rich learning environments.

References

- Barua, S. (2001). An interactive multimedia system on "Computer Architecture, Organization, and Design". *IEEE Transactions on Education*, 44, 41-46.
- Chen, S. Y. (2002). A cognitive model for non-linear learning in hypermedia programmes. *British Journal of Educational Technology*, 33, 449-460.
- Kankaanranta, M. (2005). *Innovative Pedagogical Practices in Technology-Enhanced Education - Finnish Perspective*. Retrieved November 8, 2008, from <http://e.finland.fi/netcomm/news/showarticle.asp?intNWSAID=41844>
- Kankaanranta, M. (2006). International perspectives on the pedagogically innovative uses of technology. *Human technology. An Interdisciplinary Journal on Humans in ICT Environments*, 1 (2), 111-116.
- Khalifa, M., & Lam R. (2002) Web-based learning: Effects on learning process and outcome. *IEEE Transactions on Education*, 45, 350-356.
- Kozma, R. B. (2005). National policies that connect ICT-based education reform to economic and social development. *Human Technology*, 1, 117-156.

How is your country moving Geography into the future? Portugal

Herculano Cachinho

The best way to answer the question that guides this forum is perhaps by saying that in Portugal we don't have a clear strategy to move Geography into the future. In my opinion, this response can be applied both to the fields of education and training offered by any institution of education, from elementary school to university, and to the involvement of professional associations, which through multiple activities have contributed to the recovery of Geography and for the recognition of the social usefulness of geographers.

The lack of a clear strategy to move Geography into the future doesn't mean that the subject hasn't been facing major challenges in the Portuguese society, because it has. There have been regular changes of curriculum at different levels of education in recent decades. However, the truth is that these changes, like the actions oriented to promote Geography and the relevance of the work of geographers rarely fit into a broader strategic plan with clear goals to move it forward. The reforms undertaken at the turn of the millennium are a good example of this practice. Actually, in upper-secondary schools, the structure and design of the National Curriculum can be seen as a mere product of the educational policy seeking to become reconciled with the most modern references in pedagogical and curricular innovation. In turn, at the higher education level, changes took place not for the reason that academics believe they are useful, but rather because it is necessary to satisfy the requirements of the Bologna Declaration and the Lisbon Strategy.

Whatever the reasons for recent changes in the Geography curriculum, there is no doubt that many aspects of the Portuguese geography curricula already look into the future. Several pieces of evidence can be used to justify this statement:

- First, the Earth and human communities face major challenges to which it is necessary to find effective responses. The options to be taken, at a variety of geographic scales, will depend on our common future in the world, especially the next generations. However, geography has faced these challenges in a proactive way, giving them a place of prominence in the study programs. The education for citizenship, namely through the acquisition of a territorial consciousness and the claim for the respect for the rights of all people to equality; the environmental education, throughout the call for sustainable use of resources, and responsible environmental planning, management and protection; and the education for sustainable development, through the natural propensity of Geography to adopt a holistic and interdisciplinary approach to the environmental and social problems, are today cross-sectional issues at different levels of education.
- Second, our future world will be dominated by technology and information, and by a more competitive and interconnected economy. Meaning that the world will

require high levels of spatial literacy and competency. Through the development of Geographic Information Systems (GIS) and the central role played by ICT in study programs, geography can equip young graduates with essential tools to acquire the spatial skills and competencies that are indispensable to solve problems and to respond to the impact of technological change on daily life.

- Third, Geography in Portugal has considerably expanded its scope in the last 30 years in both general geographical education and teacher training. Besides the key role it plays in the education of young people, geography is nowadays also an important subject in fields such as territorial management, regional and urban planning, environmental studies, location of retail facilities, and GIS. According to the latest studies on employability and career opportunities, geography has an enviable position within the social sciences. Each year Geography courses in Higher Education are highly sought after by many young people and graduates in geography are highly employable.
- Fourth, in recent years, several activities have been undertaken to promote geography and show the social relevance of geographic knowledge, skills and competencies. The annual Geography festival in the small town of Mirandela, the Open day devoted to Geography organized by the most important institutions of Higher Education, and the week of Geography patronized by the Association of Geography Teachers are perhaps the most emblematic and the ones that involve a greater number of participants. However, in this area, much remains to be done to increase the visibility of geography, to publicize the role that geographers can play in society and to turn geography into an exciting subject in our schools.

To summarize, it seems clear that the lack of a concerted strategy to move geography towards the future didn't prevent the subject from asserting its relevance in the Portuguese society. The need to remain credible in terms of the curriculum and in terms of its ability to discuss the major social and environmental issues justify that geography in many areas looks to the future.

How is Belgium (Flanders part) moving Geography into the future?

Luc Zwartjes

The main challenge for geography in Belgium is to develop our standing as a real science subject. Needless to say that we have a lot of competition from other science courses, but mostly from the general public who still see geography as an encyclopedic course.

Geography in primary education

About 8 years ago there was a reform of the program in primary education. The different courses geography, history and biology were combined into a new course called 'World orientation'.

This includes a thematic study of different subjects.

As a result teachers in the first year of secondary schools noticed a decline in the knowledge and capability of some basic geographic skills, like: working with atlases, working with scale ...

Geography in secondary education

At the moment geography is usually a one lesson/week course. The only exceptions are:

- first year: 2 lessons/week
- science option (general education) in the last year: 2 lessons/week

Geography at higher education

We have seen a decline of the number of students studying geography. Until 2006 every year about 360 students started the professional bachelor geography study. Due to a reform in 2006 the students no longer need to choose 3 subjects (in that system geography could be chosen as well as history), but just 2 courses. As a result the number declined to 260 students (- 30 %).

At the master level (to become a teacher in the higher secondary or higher education) the number of students following the special didactical courses has dropped even more. Every year a maximum of 10 students attain that didactical degree (it used to be about 60-70 in the '80 and '90).

The main reason is the ease with which graduates can get a job outside education (e.g. GIS).

This evolution: threat or not?

On the one hand it is a real threat to the quality of geographical education in secondary education. More and more non-geographers teach geography and their lack of knowledge make it into an uninspiring course. Many studies show the link between a good course and the interest of the pupils.

As a result students are no longer interested in geography, what results again in fewer students following it into higher education.

On the other hand in today's economic situation geography students are among the few to have very good opportunities to get a job after their studies.

Moving geography back in the picture: How?

A lot of initiatives have taken place in Belgium the last 5 years. As a result we have managed to change little by little the general public's opinion of the subject.

An overview of the strategy:

- 1) The University of Louvain (KUL) has **combined all courses that deal with the earth** into a new building: the geo-science building.

This building combines all the subjects of geography, geology, soil (part of bio-engineering), spatial organisation and urbanisation (part of civil engineer – architect). This has given extra opportunities to show the wide spectrum of all geo-related subjects.

- 2) **Universities and higher education take part in the science week.**

Every 2 years secondary schools have a science week in which pupils visit laboratories of higher education institutions– this is part of a government science promotion. Every university with a geography/geology department takes part with success.

- 3) **Combining the forces of geography in secondary and higher education.**

Many under the influence of the VLA (the Flemish geography teachers association), together with Fégépro (the Walloon geography teachers association) we have achieved better cooperation and visibility of geography and the geo-sciences. This has been achieved by:

- a. There is twice a year a meeting of the National Comité of geography, this committee is composed of all professors geography in Belgium. Since 2007 VLA and Fégépro have been invited to take part in these meetings. This way specific issues of interest to secondary geography education can be discussed.
- b. Last year the Comité organised again the 'Belgian geography days'. As a result of the cooperation with VLA and Fégépro a specific series of workshops were organised about geography education. On the second day excursions with interesting (educational) subjects were organised.
- c. As a result of these days the VLA is organising in cooperation with the universities a symposium about 'scientific research in geography'.

4) **Combining forces with other scientific organisations and universities.**

The VLA is a partner with different organisations. This way geography is promoted as there is always a lot of media attendance at these activities:

- a. VLA cooperated with the VLIZ to organize a 2-day symposium about the North Sea. Scientists, professors, economists, environmentalists and teachers were present and attended a number of presentations and received ready-to-use materials for the classroom.
- b. VLA cooperated with Flagis at the GIS-o-Topo-Lis days about GIS in the private sectors, public sector and education sector.
- c. VLA cooperates with companies that deal with geography: the NGI (topographical maps), Eurotronics, Intergraph and ESRI (GIS). This cooperation leads to benefits for teachers to make introduction of these tools easier in secondary and higher education.
- d. Together with the University of Ghent we take part in science projects.

5) **Make geography (or geo-science) the common name**

There is a proposal in Belgium (and some professors already do it) to mention in their title always the prefix 'geo' or 'geography' or 'geology'. In this way whenever a professor is interviewed in the media the link with the geo-sciences is made, giving the public a more informed idea of what geo-science is all about. For example a professor specialised in seismology (part of the geology department) is presented in the news he is referred to as a 'geologist – seismologist'.

6) **Cooperation with other countries is essential**

The main importance of organisations like HERODOT or EUROGEO is that it combines forces to help geography, not only on the field of promotion and visualisation but also as part of science and education. In fact the more cooperation the more good tools and material are distributed, giving geography a boost.

Results: In the long term yes!

We notice already in Belgium a change in the general opinion on geography. More and more people are starting to realize the real content of geography and its importance in today's society. There is still a long way to go but as someone said: *'Change: yes we can!'*

Luc Zwartjes

chairman VLA

luc.zwartjes@skynet.be

Cartography: An interdisciplinary tool for Teaching and Learning the world:

The case of the children of 9 years old

Maria Pigaki, Teaching Associate NTU of Athens and

Kostis Koutsopoulos, Prof. NTU of Athens.

Geography as well as geography education requires familiarization with using and approaching space with maps, in a manner similar to language education which requires the familiarization with the use of writing. From a dialectical point of view this negates into the important question: how can the schoolteachers exploit the advantages of mapping in order to strengthen the geographic thought of their students. The answer is simple, a map, although an absolutely metric tool of space, produces an abstract "reality", via simple processes and actions. In this way the understanding of reading a map helps the student to analyze the complexity of geographic space and to devise ways that clarify its processes. As a result, it is important to show, that mapping and map teaching is an appropriate cognitive tool in teaching geography.

It should also be noted that space (the world around us) is first and foremost a systemic science, as opposed to the geographic thought which is a intellectual process supported by one or more "images" of space. In order therefore to approach and analyze space there is a need for tools to describe and represent it. The map is such an instrument, which however, as an absolute metric spatial tool, based on "syntactic" rules, illustrates space in a abstract form. As a result a map in apprehending space requires two different but simultaneous approaches: The first approach is concern with the map as a cognitive object and the second one, the map as an object of spatial knowledge. In the first approach, the map operates as the intersect between cognitive and real space and in the second, as an object of spatial knowledge.

In order to help Geography in moving forward, a methodological framework needs to be constructed to show how spatial thought is transmitted. More specifically a framework is necessary to understand and codify this intermediary tool, the map, in order to proceed in the examination of a stepwise approach through the cognitive, constructive and didactic processes which lead to the basic components of Geography.

Analytically, these processes take place along three axes representing: The **Euclidean space** which via spatial rationalization provides topographic maps, which through the cognitive process of knowing, lead to the teaching of geographic skills, one of the three basic geographic components. In a similar manner the "**invisible**"

space through spatial analysis, thematic maps, and the process of understanding lead to the teaching of Geography subject matter. Finally, the **structured space**, through organization, mathematical maps and the process of applying, lead to the geographic perspectives.

In conclusion, although the map does not constitute an innovation, nevertheless if approached as a cognitive object as well as an object of spatial knowledge it represents a viable and an optimum methodology in the teaching and learning space.

THE FUTURE OF GEOGRAPHY EDUCATION IN TURKEY

Salih Sahin

Turkey has experienced some developments in geography in terms of geographic understanding, content and teaching-learning processes. It is necessary to evaluate the past and present state of geography education in Turkey to be able to foresee the future state of it.

Recently, one of the important issues in social life is planning the future. In this context, individuals try to make future plans in social, political and scientific terms. This is a need for nations to survive. Geography education has an important place in the planning for the future because; one of the most important concerns of geography is to develop world perception, consciousness of citizenship and geographical consciousness in individuals.

There have been several important changes in both physical and human events since the beginning of the world. Some of them are population growth and migrations, usage of natural resources and energy consumption, as well as global climate changes, floods, calamities, drought, earthquakes, and hurricanes. Contemporary individuals should understand these events and be able to evaluate them. Geography education has an important place in providing people with these qualities through the teaching-learning process.

In fact, it is not easy to anticipate what will happen in the future. However, present rapid developments in natural and human events give us some hints about the future. In this context it is necessary to foresee the possible events that can occur in Turkey and shape geography education. Changes and developments will have different dimensions in terms of teachers, students, and other stakeholders. For instance, this age is the technology age. Information communication technologies will have much more influence on our lives in the coming years. In this context, benefiting effectively from ICT has become more important to provide permanent learning in geography education.

In the light of rapid changes and developments, it is inevitable that any important developments in geography education progresses in terms of teachers, students, and other processes. Therefore, having knowledge of developments all over the world, using information communication technologies more frequently, understanding the changes in physical and natural events, making the world a more livable place

and maintaining it should be determined as the most important aims in geography education in Turkey.

As the past developments in geography education are considered, it is very probable that changes and developments in almost all fields will affect the future. In this context, when determining the future of geography education in Turkey, the following points should be paid attention to:

When the content of geography is determined within the context of recent changes and developments, the characteristic of being sensitive to global changes and problems should be maintained. The effective usage of geographical knowledge should be provided to answer the expectations of the community.

Current issues such as sustainable development and being careful about the effective and economical usage of natural resources should be determined as basic contents in geography education. This case should be one of the main components of future geography education in Turkey in terms of developing consciousness of the world and educating individuals that are sensitive to the world, which is one of the main aims of geography education.

To be able to attain these desired objectives, we should give sufficient importance to geography education. It is necessary to teach geography in appropriate ways from the preschool period. Designing geography classrooms in every secondary school is a necessary condition for effective geography education. In these classrooms, necessary laboratory materials and ICT should be provided to increase the efficiency of geography education.

In Turkey, to benefit from geography education as much as possible, a content which ensures that individuals can use the geographical knowledge that they get throughout primary school and university, should be arranged.

Necessary background services should be conducted to provide sufficient opportunities for students and teacher in terms of benefiting from information communication technologies and Geographical Information Systems (GIS). In this context GIS, which is one of the important expansions of geography, should be applied at all levels of geography education.

It will be suitable to consider social studies-mathematics points instead of social studies points in geography thanks to its location in natural and social sciences.

One of the important components of geography education is teacher training. The curricula of geography departments in higher education institutions should be updated. Furthermore, we should give importance to in service training so that teachers can keep up with the changing conditions.

One of the important matters for the future of geography education in Turkey is arranging appropriate materials for geography education to enable teachers to be effective.

Beside all of these, it is necessary to give importance to cooperation between teachers and students by preparing projects with other countries in all levels of education. Thus, we can provide integration between Turkey and other countries in terms of geography education.

When we consider the past and present state of geography education it is clear that similar developments will exist in the future. In this context the present problems in geography education should be determined. Thus, the future of geography education will be in safe hands.

With this aim we should make plans by considering developments all over the world and conditions in the country. Also, some arrangement should be made in primary and secondary schools in terms of the curriculum, content, instruction-education activities, materials, usage of new educational techniques and usage of information communication technologies.

One of the most important claims of geography education is to grow as individuals that have geographical consciousness and that are sensitive to nature and human conditions. In this context, geography education should design the future and have concern for the future. Therefore, from the preschool period, geography education should be provided to people in appropriate ways.