

NATIONAL DIFFERENCES IN EDUCATION AND EXAMINATION IN CARTOGRAPHY

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ABSTRACT

In the European Union, the various national training systems award different types of certificates or diplomas. This fact is the main reason why job mobility in the European Union cannot sufficiently be realised at present, as for specific cartographic jobs specific (national) certificates or diplomas are required.

The author collected material on the different educational programs in cartography in the countries of the European Union. This material pertains to the duration, contents, level, amount of practical work, etc., required of the practical training courses, that include apprenticeships. He collected this material through questionnaires directed at the practical training institutions for cartographers in the different member states.

Some of the questions put in this questionnaire were, for example:

- Do you have job training in your country?
- Is the training recognised by the government?
- What is the school level required to start the training?
- Do there exist definite Training Profiles?
- What is the designation of occupation?
- How long is the duration of training in years?
- Which institutions or organisations are available for the training?
- Where is the field of activity?
- Which occupation and required skills are necessary for a cartographer?
- What is the certificate / title/ in your country?
- How old is the cartographer when he/she is starting the job?
- Which level is the starting salary in Euro?

Though the education and the certificates/diplomas in the countries of the European Union are different, all the certificates awarded are legal, even if they may not be the required ones for specific job descriptions. As national policy is responsible for the education programmes, the contents of the courses can be completely different. This is translated consecutively in the diploma requirements stated for specific job descriptions. This is the main barrier to job mobility in the European Union.

Though the material presented here stems from a European context, the issues raised in this paper are of interest to a wider audience: Today we can find this problem of job mobility versus diploma requirements on a global scale as well. I hope, that by highlighting the differences between the national cartography programmes we can find a way to realize more equal opportunities on a global market.

1. THE QUALIFICATIONS AFTER THE TRAINING AS CARTOGRAPHER ARE APPRECIATED BY THE COUNTRIES OF THE EUROPEAN UNION (EU)

- The activity of the association includes a single market that removes all obstacles among the member countries (Contract when the EU was established, version from October, 2 1997, Art. 3.1c)
- A mobility of the employees is granted within the association (Art.39.1).

2. NATIONAL DECENTRALISED EDUCATIONAL POLICY IN EU

- The member countries decide the educational policy and how the training is organized
- The consequences are different national educational systems, qualifications and different diploma or certificates

3. THESIS

- Different national educational systems and different certificates aggravate the international appreciation of diplomas.
- The result is no equal opportunities and no professional mobility

4. THE SITUATION: CARTOGRAPHIC EDUCATION AND TRAINING IN GERMANY

Distinct fields of opportunity to the cartographic profession:

- apprenticeship as cartographer
- study at the Polytechnic / qualified graduate-engineer for cartography
- study at a university / qualified diploma in engineer for cartography
- bachelor or master of cartography

The following report refers to the apprenticeship as cartographer (draughtsperson/technicians)

5. EDUCATION AND TRAINING FOR CARTOGRAPHIC TECHNICIANS

In Germany the federal authority for education *Bundesinstitut für Berufsbildung* has the task: to define the job possibilities concerning:

- the job title
- the profile
- the length of training

6. THE DUAL TRAINING SYSTEM

6.1 Training places

- "in house" training in an office
- vocational school

6.2 The development and the length of training are administered

- for the manual facilities by a curriculum of the management.
- for the theoretical knowledge by a curriculum of the vocational school.

7. FIELD OF ACTIVITY

- Cartographers work in public service, private engineering consulting firms or in publishing companies.
- they visualize geodata:
they collect and update spatial data, using analogue and digital techniques to get topographical maps, thematic maps and applications of mapable information as well as graphic design and multimedia products.

8. OCCUPATION AND REQUIRED SKILLS

Cartographers must be able to:

- evaluate source material for cartographic presentation and plan the design of maps and presentation graphics;
- advise clients in the design and realization of cartographic products, select the appropriate production route and plan work flows;
- collect, manage and edit area-related data;
- convert data for use in maps with various themes, presentation graphics and multimedia products;
- supply the edited data for use in a variety of media;
- use information and communication technology.

9. SURVEY 2002 IN THE EU ON THE EDUCATION AND TRAINING AS CARTOGRAPHER

- appreciation of the training
- entrance qualification
- job title

- institutions for the training
- length of training
- field of activity
- required skills
- age entering the training
- certificates
- entrance salary

10. RESULTS OF THE SURVEY 2002

- in the German-speaking-countries: Austria, Switzerland, Germany
- in the countries of the EU
- in countries that want to become member of the EU

10.1 Results in the German-speaking section

equivalent:

appreciation of the training
 entrance qualification
 institutions for the training
 job title
 field of activity
 required skills
 certificates

differences in

length of training
 entrance salary

Examples of the results in the German-speaking section:

Austria

job title: *cartographer*

appreciation of the training by the government: *yes*

entrance qualification: *Public-School*

institutions for the training: *dual system - public organisations or private firms and vocational school*

length of training: *3 years*

age entering the training: *19 years*

certificates: *yes*

starting salary: *1.300 €*

Switzerland

job title: *cartographer*

appreciation of the training: *yes*

entrance qualification: *public school*

institutions for the training: *dual system - public organisations or private firms and vocational school*

length of training: *4 years*

age entering: *21 years*

certificates: *yes*

starting salary: *2.400 €*

Germany

job title: *cartographer*

appreciation of the training: *yes*

entrance qualification: *public school*

institutions for the training: *dual system - public organisations or private firms and vocational school*

length of training: *3 years*

age entering: *21 years*

certificates: *yes*

starting salary: *1.400 €*

10.2 Results from the countries of the EU

Three sorts of replies:

Equivalent training with the German-speaking countries

Deviations concerning the cartographic education

No traditional draughtsperson, only academic qualifications as bachelor and master

Equivalent training with the German-speaking countries:

Denmark
Finland
United Kingdom
Portugal

Examples of the results from the EU countries:

Denmark

job title: *mapping- and surveying technician*
appreciation of the training: *yes*
entrance qualification: *grammar-school or public-school and vocational training*
institutions for the training: *college of advanced technology*
length of training: *2 years*
age entering: *21 years*
certificates: *yes*
starting salary: *2.600 €*

Finland

job title: *cartographer*
appreciation of the training: *yes*
entrance qualification: *public school*
institutions for the training: *dual system – vocational school and organisations*
length of training: *3 years*
age entering: *22 years*
certificates: *yes*
starting salary: *1.650 €*

United Kingdom

job title: *cartographer*
appreciation of the training: *yes*
entrance qualification: *secondary school*
institutions for the training: *Government mapping, charting agencies and College of Technology*
length of training: *2 years*
age entering: *18 years*
certificates: *yes*
starting salary: *no answer*

Portugal

job title: *cartographer technician / drawing*
appreciation of the training: *yes*
entrance qualification: *public school*
institutions for the training: *dual system - public organisations or private firms and vocational school*
length of training: *3 years*
age entering: *19 years*
certificates: *yes*
starting salary: *665 €*

differences / deviations:

France:

There is only training in Paris

Italy:

The education and training is not appreciated by the government

Netherlands:

No traditional training as draughtsperson / technicians.
The management asks for higher qualification.
Result: academic qualification.

Sweden:

No traditional training as draughtsperson / technicians.
The management asks for higher qualification.
Result: academic qualification.

Norway:

Traditional training until 1990.
The management asks for higher qualification.
Result: academic qualification.

Examples of the results from the EU countries:

France

job title: *cartographer*
appreciation of the training: *yes*
entrance qualification: *secondary school*
institutions for the training: *dual system - public organisations or private firms and vocational school*
length of training: *2 years*
age entering: *19 years*
certificates: *yes*
starting salary: *no answer*

Italy

job title: *cartographer*
appreciation of the training: *no*
entrance qualification: *secondary school*
institutions for the training: *IGM (vocational) school*
length of training: *2 years*
age entering: *19 years*
certificates: *yes*
starting salary: *1.160 €*

Netherlands

a specific cartographic education and examination does not exist
job title: *mapping- and surveying technician*
appreciation of the training: *no*
length of training: *no answer*
age entering: *21 years*
certificates: *no*
starting salary: *no answer*

Norway (until 1990)

job title: *cartographer*
appreciation of the training: *yes, until 1990*
entrance qualification: *secondary school*
institutions for the training: *private or public firms*
length of training: *3 years*
age entering: *19 years*
certificates: *no*
starting salary: *2470 €*

Sweden

a specific cartographic education and examination does not exist
job title: *mapping- and surveying technician*
appreciation of the training: *no*
length of training: *no answer*
age entering: *21 years*
certificates: *no*
starting salary: *no answer*

No traditional training, only study as bachelor, master, doctorate:

Belgium
Greece

Ireland
Netherlands
Norway
Sweden

10.3 Results of countries which are on their way into the EU

Three sorts of replies:

Equivalent training with the German-speaking countries
Deviations concerning the cartographic education
No traditional draughtsperson / technicians, only academic qualifications as bachelor and master

Equivalent training with the German-speaking countries:

Slovakia
Hungary

Examples of the results of countries which are on their way into the EU:

Slovakia

job title: *cartographer*
appreciation of the training: *yes*
entrance qualification: *vocational grammar school*
institutions for the training: *dual system - public service or private firms and vocational school*
length of training: *5 years*
certificates: *yes*
starting salary: *200 €*

Hungary

job title: *cartographer*
appreciation of the training: *yes*
entrance qualification: *public (elementary) school*
institutions for the training: *dual system – cadastral offices or private firms and vocational school*
length of training: *5 years*
age entering: *19 years*
certificates: *yes*
starting salary: *400 €*

deviations:

Czech Republic:

They accept the training with the dual system, but since the development to the digital computer-aided cartography academic qualifications are required.

Examples of the results of countries which are on their way into the EU:

Czech Republic:

job title: *cartographer*
appreciation of the training: *yes*
length of training: *3 years*
certificates: *yes*
starting salary: *no answer*

No traditional training, only study as bachelor, master, doctorate:

Poland

11. CONCLUSION

11.1 The training within the EU demands

Comparable training systems with
their operational module,
their common training standards,
certificates which will be acknowledged by all EU states

11.2 Further education demands

concepts consisting of different modules,

which will enable students to learn to get to know innovative methods and further techniques while working as cartographer, each module will be certificated.

12. DEVELOPMENT AND AIMS

Entering in an increasing international competition there is a demand for education and training to realize equal opportunities and mobility on the labour market in the European Community.

Today we can find this problem of job mobility versus diploma requirements on a global scale as well.

I hope, that by highlighting the differences between the national cartography programmes we can find a way to realize more equal opportunities on a global market.

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Wolfgang MEISSNER

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Born: 14.11.1941. Nationality: German.

Vocational development:

1958 – 1962 vocational training on cartography in Leipzig and Gütersloh.

1963 – 1966 study for engineer of cartography in München.

1967 – 1972 employed at the Municipal Survey and Cadastral Office in Nürnberg.

1973 – 1977 study in social geography at the Technical University in München.

1978 – 1984 deputy head of department at the „Bundesforschungsanstalt für Landeskunde und Raumordnung“ (Federal Research Institute) in Bonn.

Since 1984 head of department for cartography and techniques at the Municipal Survey and Cadastral Office in Dortmund.

Honorary activity / voluntary work for the training in cartography:

1988 – 2001 chairman of the Commission on Education and Training of the German Cartographic Society. Editor and publisher of the “Ausbildungsleitfaden” (Manual for the training of Cartographers).

Since 1988 member of the Commission on Education and Training of the International Cartographic Association.