Aspects of the State of Geography in European higher education

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1. Introduction

1.1 Context

The state and status of Geography in different countries and regions has been the subject of considerable debate, research and publication, especially in the United States (Harman, 2003). In academic Geography the on-going discussion has been about the nature, validity and methods of the discipline (references). Much of the debate has focused on analysing the nature of geographical knowledge and how it relates to others outside the subject. It also deals with the ways that knowledge is produced, as well as providing scepticism about the claims of different knowledge producers. In geographical education the literature has tended to focus on the place of geography in the curriculum and the approaches used, predominantly in school education (Hopkin, 2001; Lambert & Machon, 2001; Liiber & Roosaare, 2000; Rawling, 2003; Reinfried, 2001; Westaway & Rawling, 2003), in order to provide a review of the status of geography (Fodor, 2003; Liiber et al., 2000; Piróg & Tracz, 2003), the key issues, challenges, developments, events and accomplishments (Bednarz, 2002; Walford, 2000). These ‘contested identities’ of Geography are thus evident in geographic scholarship and are then transposed into the nature and function of the geographic discipline (Turner, 2002).

International comparative research that reflects on any longitudinal trends taking place in Geography education has been less common. Rod Gerber (2001) reproduced work undertaken in 1996 by Hartwig Haubrich on ten educational directions, in order to examine the state of geography curricula at different formal education levels in 31 countries. These directions were: regional identity, national identity, international solidarity, global solidarity, environmental education, development education, peace education, intercultural education, gender education and citizenship education. The results were then used to provide a greater understanding the strengths and weaknesses of geographical education in different parts of the world. The findings revealed a number of challenges for international geographical education.

There have been relatively few trans-European studies of the situation and circumstances of geographical education. What has been done has mainly been carried out at a national level. Chevalier (2000) undertook a comprehensive review of primary and secondary school programmes across Europe. He demonstrated the intricacy and complexity of undertaking such an analysis. A European inventory of some school geographical education programmes and texts was carried out under the Minerva Project EURO.GEO (Donert, 2003). This pointed to the slow response of national curriculum programmes to the demands of increasing europeanisation. EUGEO produced set of papers on the new trends and state of geography in their nations for the 30th IGU Congress. This provided an international viewpoint of Geography from the perspective of national professional associations in Europe (Vandermotten, Nicolai, & Montanari, 2004) as well as indicating establishment, aims and activity of the association of associations (Montanari, 2004).

1.2 The IGU and International Charters

The International Geographic Union is an international geographical society which was established as a permanent organisation in 1922. It has 64 Commissions, one of which is the Commission for Geography Education (IGU-CGE). Included in the aims of the IGU-CGE are to promote geographical education around the world, to enhance the place, status, role and image of geographical education in all education sectors,
to develop higher international standards in geographical education and to improve communication amongst geographical educators across the world.

Supranational organisations like the IGU have the potential to make significant decisions that are not related to any specific national government or policy. These actions result in statements which set out the fundamental values and principles on which the organisation as a whole and the individuals involved believe in. These documents can then be endorsed by other organisations representing a large number of individuals.

The *International Charter on Geographical Education* (IGU-CGE, 1992) was the first such a statement for Geography. It was developed through long periods of consensus building and international discussion and then published by the Commission on Geographical Education for the International Geographic Union (IGU). The IGU Charter has become a widely acclaimed important influence on policy development in geographical education in many countries (Chalmers, 2005). It provides a framework that recognises the fundamental role that Geography plays in education. The Charter has been translated into many languages. Its value comes from offering international advice on such key themes as: the contribution of geography to education; concepts and content in geographical education; and principles and strategies for implementation. It has been added to by the *Declaration on Geographical Education and Multicultural Education* (IGU-CGE, 2000) which relates to the importance of internationalisation in geographical education through recognising cultural differences in different parts of the world. A third document *The Lucerne Declaration on Geography Education for Sustainable Development* was recently adopted.

Other organisations have taken forward their own related initiatives. For example *Geography: an Education for life* was developed by the Royal Geographical Association and Institute of British Geographers (RGS-IBG, undated), which sought to raise the awareness of Geography in the UK. It did this by gathering professional ambassadors for Geography together so that they could identify how the subject could fully contribute to education so that its potential as a subject could be realised.

1.2 Europe and the Bologna Process

The European Commission (2006) acknowledges that Higher education plays a central role in the development of both human beings and modern societies as it enhances social, cultural and economic development, active citizenship and ethical values. All the recent European summits (from Lisbon 2000 on) underlined the contribution of education in setting up the European knowledge society (European Commission, undated).

Through the report “Towards a Europe of knowledge” (Commission of the European Communities, 1997), the guidelines for Community action were established in the areas of education, training and youth for the period 2000-2006. This established the policies which sought to drive the knowledge society, namely innovation, research, education and training. Three dimensions of the European educational area were to be emphasised through the Europe of knowledge, these were:

a) to develop their fund of knowledge
b) to enhance citizenship and
c) the development of employability through the acquisition of competencies made necessary through changes in work and its organisation.

This process has since been directly and specifically linked to the European Union aim of developing lifelong learning. This was incorporated into the Amsterdam Treaty, expressing the determination of the Union to promote the highest level of knowledge for its people through broad access to education and its permanent updating. In 2007 the Lifelong Learning Program for 2007-2012 was established (European Commission, 2007a).

In 1999, Ministries from 29 European countries signed the Bologna Declaration (European Commission, 1999b), which calls for the establishment of a European area of higher education by the year 2010. Within Europe the aims were to encourage the workforce to become more mobile, that qualifications should become transparent and recognised, that quality and the European dimension in higher education will be promoted in order to improve the attractiveness of European institutions, especially for students from third countries.

In 2001, higher education ministers from 32 European countries met in Prague and launched the process of creating a European higher education area. The ministers also emphasised the importance and relevance of lifelong learning (European Commission, 1999a) as an essential element of the European Higher Education Area. They challenged stakeholders and especially higher education institutions and students to engage with the Bologna process and to become involved in shaping an efficient, adaptable and diversified European Higher Education Area (EHEA). The EHEA was to be established so that it would promote a specific European dimension. After Bologna (1999), the European Ministers of Education met in Prague (2001), Berlin (2003) Bergen (2005) and London (2007) to review the progress of the Bologna process and set directions and priorities towards establishing the European Higher Education Area. They will meet again in Leuven/Louvain-La-Neuve in April 2009.

In 1999 six action lines were identified and three more were later added during the Prague meeting in 2001. These were:
1. a system of easily readable and comparable degrees
2. a system essentially based on two cycles
3. a system of credits
4. promotion of mobility
5. promotion of European cooperation in quality assurance
6. promotion of the European dimension in higher education
7. lifelong learning for European citizens
8. higher education institutions and student organisations
9. promoting the attractiveness of the European Higher Education Area

1.3 Geography and Bologna
Geography as an academic discipline provides many clear links to learning for life (Birzea, 2000; Clark & Higgitt, 1997) and for living in a world where the critical decisions of citizens have major implications on the future of our planet. Geography, through the study of physical environments and resources; cultures, economies and societies; people and places, offers an opportunity to deal with social, economic and environmental change in a sustainable way (Rawling & Daugherty, 1996). Living in a
21st century society has the increasing burden of dealing with cultural tolerance and the sensitive management of our resources. Therefore, it is clear that geographical education, as it provides awareness, knowledge and understanding of a changing and interconnected world, has a key role to play in helping European citizens to improve their understanding and awareness of these issues and in supporting them so that they can deal suitably with them. Geography also develops fundamental skills for life, such as spatial thinking (Bednarz, 2007), field work, investigation and research, graphicacy and communication.

1.4 European Information Society and the eEurope initiative
Since 1999, the development of a European Information Society has been promoted by the eEurope initiative (Commission of the European Communities, 1999). The key objectives have been to bring all citizens, businesses, and administration on-line, to promote education, and the availability of venture capital, and to ensure that the whole process is socially inclusive while strengthening social cohesion. eEurope has been acted upon through two Action Plans for 2002 (Commission of the European Communities, 2000) and 2005 (Commission of the European Communities, 2002) focusing on cheaper internet access, education and skills, and developing key application areas including geo-information (Craglia, 1999). Establishing a European Information Society recognised the important role played by higher education in raising awareness, promotion, development (including education and training) and the integration of GIS into most aspects of the enlarged European society (Craglia & Masser, 2002).

1.5 European Enlargement
There have been five enlargements of the European Union, with the largest taking place in 2004 when 10 states joined. Enlargement of the EU, with subsequent integration, is a complex process with profound impacts, which involves many levels of implementation. This brings about certain issues related to the convergence and divergence of national systems and processes. On the one hand European policy supports cultural diversity among member states. On the other hand Bologna promotes the need for harmonisation, especially concerning mutual recognition of competencies, qualifications, diplomas, certificates and credits. This implies mutual trust in European education systems and their outputs as a cornerstone for a European educational space. Countries involved in accession prepared their structures for the successful application of the Bologna process.

There are aspects beyond formal higher education structures which are important to consider in an enlarged Europe. Field (2002) suggests that higher education can promote active European citizenship in four ways. Firstly, there is a research function which can challenge and communicate opinions to citizens. Secondly, higher education enables the critical engagement of citizens through their teaching and research, forming critical citizens. Universities are also large organisations with their own extended communities. They seek to widen participation and thus make a constructive contribution to local and regional communities. Finally higher education is an ideal forum for the critical examination of cultural diversity and European society. Higher education therefore can help young citizens to realise their relationship to the wider community, and appreciate their own responsibilities to it.
2. Researching the state of Geography: Methodology

In late 2002 HERODOT was established as the Thematic Network for Geography teachers and lecturers in higher education. It was established at a very significant and formative moment of higher education reform in Europe. The creation of a new European Thematic Network specifically for Geography in higher education, allows comparative research that will provide a body of supporting evidence to inform decision makers and allow the position of Geography and geographical education to be maintained and enhanced. At that time it was considered important to undertake European-wide information gathering in order to understand the state of Geography, the curriculum and internationalisation so that the challenges which had been laid down by the Bologna declaration could be met. The research for this report was thus undertaken as a base line of the state of Geography in higher education in Europe.

In 2003-4 when initiating the HERODOT network and in order to review the needs of its member organisations, project partners volunteered their time to complete an extensive written survey (Appendix 1) which they received by email. They also undertook the production of a Powerpoint presentation of the state of Geography in their country. These national Powerpoint presentations were created based strictly on a template provided (Appendix 2). Where there were responses from more than one person at the same institution, these responses were pooled to obtain the most common and consistent response for each of the items in the survey. As a result, more than 65 department responses were obtained, though not all respondents completed all questions.

In all, 65 of the 76 European higher education departments from 27 countries responded to the in-depth questionnaire about the state of Geography in their countries, the institutions they belong to and also their own geographical activities. Of the responses received 12 organisations were only involved in teacher training, and so not offering undergraduate or postgraduate Geography degrees. In presenting and analysing the results here, personal and institutional details were made anonymous. The questionnaire data was gathered and collated onto a spreadsheet. Powerpoint presentations were returned by email. Information from the Powerpoint presentation and the questionnaire data were collaboratively classified by two research assistants who were working independently to the HERODOT partners and then presented to and agreed by the network members. This method was used in order to avoid potential survey bias in the presentation of findings. A summary Powerpoint slide and an agreed national profile statement resulted (Appendix 4).

The data gathered sought to provide useful information to enhance curriculum developments under the Bologna Process. So, information was collected at national, university, department and individual scales, rather than just at national level. The department focus ensures that the disciplinary structure of how teaching in universities is organised is taken account of. Departments tend to provide a framework for the undergraduate curriculum. The disciplinary department also connects teaching and research though the interaction is a dynamic one as research practices also feed back into the disciplinary structure, so that knowledge, ideas, approaches, techniques, and teaching methods can be revised. Individual information allowed the respondents to reflect on their own activities and approaches to the subject and thus to consider their own place in the state of Geography. It was felt that this would also be a very valuable way to launch the work of the HERODOT Thematic Network.

The range and variety of information collected was quite extensive. It consisted of:
• the perceived national profile of Geography, in schools and in higher education, presented in sections 3.31 and 3.32 respectively, including challenges, threats and changes.
• departmental geography, the state of the department of the respondent, concerning size, students, languages, teaching and research areas, fieldwork and laboratory activities (mainly presented in sections 3.32 and 3.33).
• individual activities of the respondents, in terms of teaching resources, teaching and learning approaches (presented in section 3.33).
• departmental European and international activities and an awareness of European developments (presented in section 3.33).
• professional concerns and aspects of professional development (presented in section 3.34).
• department initiatives, projects and innovations (presented in section 3.35).
• the perceived role of the HERODOT Thematic Network, respondent interests and needs (presented in section 3.4).

Gathering such a broad range of information was based on arguments strongly developed by Marsden (1997), that curriculum development should contain a aspects of subject content, educational processes and social purposes. Without a balance between these components, he commented that the resulting curriculum is likely to be distorted and to offer relatively low quality education.

Responses from the survey have been analysed on the basis of the frequency of the responses for each of the questions. So analyses were completed for all replies and for all countries. No attempt has been made to divide the participating countries according to their location, history, size or any other criteria.

A total of 56 completed Powerpoint presentations were received from institutions in 27 European countries. The Powerpoint slides and data from the questionnaire were made available from the HERODOT project Web site (http://www.herodot.net). Information from the presentations and surveys was then pooled and summarised by the independent research assistants, in order to create, for each country, a one-slide national profile representing the state of Geography based on a template structure established by the project coordinator and his team (Appendix 3). This profile and the data classification from the questionnaire were then discussed by the project team through an iterative process (on email and by telephone) with each of the survey respondents, until full consensus on what was being presented had been reached. As a result a series of maps of the state of Geography (section 3.1) and national profiles (section 3.2) were produced, followed by an in-depth presentation and description of the questionnaire data (section 3.3).

There were potentially many limitations in the gathering of this information, not only in terms of its complexity and length, but also as a result of the qualitative nature of some of the responses. Language issues led to the loss of some data, where respondents said they did not understand what was meant by the question. The questionnaire was provided and completed in almost all cases in English, though French and Spanish responses were also received and translated. Several respondents also clearly did not understand some of the questions and thus their information was discarded as their replies did not relate to question which had been asked.
A further limitation of this research was that the survey was not, in most cases, representative of all higher education organisations in each country. Regional, state and national linguistic differences, for example in larger or very diverse countries like Germany, France, Switzerland, Belgium or the UK could not be taken into account. As Geography in higher education was organised in so many different ways and the information available to respondents on the situation in their countries was so different, the extent of the details provided in the replies to the open questions in particular was very varied. As a result the analysis of these types of questions could only be carried out in a rather generalised way, with factors and issues being extracted from them. In doing so a certain amount of information and authenticity was lost. It is for this reason that a number of significant replies are quoted to illustrate clearly the points being made.
3. Results

3.1 Mapping the State of Geography
This section presents a country map of the perceived state of Geography in schools (Figure 3.11) and in higher education (Figure 3.12). This does not relate in any way to the status or starting point of Geography. These maps were created in response to comments made in the questionnaire.

The perceived school situation suggests that in most countries Geography appeared to be either stable or in decline. In fact Geography was only said to be growing in only two countries, Estonia and Slovenia. Decline in schools was seemingly taking place in many large and ‘old’ European countries. This should be of great concern to all those involved in the discipline.

![Figure 3.11: The state of Geography in schools](image1)

![Figure 3.12: The state of Geography in higher education](image2)

The perceived state of Geography in higher education (Figure 3.2) demonstrated an apparently healthier situation than that shown by schools. Geography appeared to be experiencing growth in as many countries as it was stable or in decline.

3.2 Country profiles
Country profiles were established for 28 countries. These are presented in Appendix 4. They provide a summary of the national, institutional, department and individual situations. Respondents had also been asked to comment on the perceived national challenges and threats to Geography in schools (Figures 3.21-3.28) and perceived national challenges and threats to Geography in higher education (Figures 3.29-3.217).
Figure 3.21: Perceived challenges to school Geography: the position of Geography

Figure 3.22: Perceived challenges to school Geography: the status of Geography

Figure 3.23: Perceived challenges to school Geography: the approach to Geography

Figure 3.24: Perceived challenges to school Geography: the curriculum

Figure 3.25: Perceived challenges to school Geography - others

Figure 3.26: Perceived threats to school Geography: the position of Geography
At school level, the position of Geography is perceived as both a challenge and a threat in most European countries.

Figure 3.27: Perceived threats to school Geography: the status of Geography

Figure 3.28: Perceived threats to school Geography: teacher training

Figure 3.209: Perceived challenges to higher education Geography: Bologna process

Figure 3.210: Perceived challenges to higher education Geography: Curriculum change
Figure 3.211: Perceived challenges to higher education Geography: the position of Geography

Figure 3.212: Perceived challenges to higher education Geography: the status of Geography

Figure 3.213: Perceived challenges to higher education Geography: the approach to Geography

Figure 3.214: Perceived threats to higher education Geography: the position of Geography

Figure 3.215: Perceived threats to higher education Geography: the status of Geography
Interestingly, in higher education, the Bologna process was not perceived to be a major challenge to Geography. However, either the position or the status were deemed important.

3.3 Questionnaire survey results: What is the State of Geography in Europe?

The Preface to the IGU-CGE Charter states that the Commission on Geographical Education of the International Geographical Union is:

"Convinced that geographical education is indispensable to the development of responsible and active citizens in the present and future world,

Conscious that geography can be an informing, enabling and stimulating subject at all levels in education, and contributes to a lifelong enjoyment and understanding of our world,

Aware that students require increasing international competence in order to ensure effective cooperation on a broad range of economic, political, cultural and environmental issues in a shrinking world,

Concerned that geographical education is neglected in some parts of the world, and lacks structure and coherence in others,"


Lambert (2004) justifies the place of Geography in the curriculum by suggesting that it is concerned with ‘making sense of the world’. Geography provides a focus on places and regions, landscapes and environments, cultures and societies, all at a variety of different scales, from local to global. This means that it alone as a discipline offers a unique bridge between people and the effects they have on our planet. Geography and geographers can and should make a strong case to be a core educational component supporting the development of citizens.

This section deals with responses on the state and position of Geography in the school curriculum (section 3.31), the state and position of Geography in higher education (section 3.32) and aspects of student learning and teaching in higher education (section 3.33).
3.31 The place of Geography in the school curriculum

The health and success of geography in higher education depends on the number and quality of applicants for courses. Therefore the place of Geography in schools and the image portrayed of the subject are significant factors for the subject in higher education. Rawling (2003), researching in the UK, confirms that fewer pupils in upper secondary schools feed lower numbers taking degree level geography, resulting in fewer recruits into teacher education and eventually fewer subject specialist teachers. Teacher recruitment problems are related to issues like public image of Geography and the perception that school geography lacked status and opportunities for creative teaching (Rawling, 2000). It is therefore surprising that there has been relatively little comparative international research on the status of the subject at school level (Croft & Chalkley, 1999) or of the visibility of the subject in school (Hogg, 1995), even though they appear to play an important role in determining the relative stability, progression or decline of Geography in higher education (Rawling, 1996).

This section looks at the status and situation of Geography in secondary and high school Geography in Europe. In most European countries Geography was a compulsory subject at some point in the school curriculum as suggested by Chevalier (2000). However there was considerable variation in terms of the ages that Geography was taught as a compulsory school subject. Additionally any survey of school geography cannot be fully comprehensive as there are so many regional and local variations (EURYDICE, 2004). However some significant trends and issues can be identified.

In ten countries Geography remained compulsory until the final years of schooling, where pupils were aged 17-19 (Austria, Belgium, Czech Republic, Estonia, France, Iceland, Norway, Romania, Slovak Republic and Switzerland). However the situation was not straightforward as for example, in Austria Geography and Economics was only a compulsory subject in advanced secondary education in certain types of school. In the Czech Republic, Geography was only compulsory at Grammar Schools (Gymnasiums) and in some vocational schools. In some countries like France, Iceland and Norway, Geography was taught along with other subjects, either as social science or applied science. In these cases respondents mentioned that classes may frequently be taught by non-specialist teachers and so the actual amount of Geography that was covered was usually restricted by the lack of teacher expertise available. In Norway, for example, Geography as a compulsory school subject was part of social science (geography, history and social studies). However, most teachers were predominantly trained in History. So, local conditions were said also to significantly limit the extent, supply and quality of Geography provision in schools. Therefore, though Geography may appear to be compulsory, teacher interest and expertise further limited the amount of teaching of Geography. Curriculum autonomy was another restricting factor which was said to affect Geography, whereby in some cases schools were said to be providing non-statutory educational options, such as additional languages or ICT, in place of what were compulsory Geography classes.

In twelve countries (Denmark, Finland, Germany (some states), Hungary, Ireland, Italy, Latvia, Lithuania, The Netherlands, Poland, Portugal and Slovenia), Geography was a taught subject compulsory until the age of 15 or 16. In Italy at the time of survey the secondary school system was undergoing substantial reform with a considerable decrease of Geography foreseen. The types of school also restricted what could and should be taught and by whom. In fact Geography was divided across the curriculum, being partly taught within natural sciences (physical
geography) and also within social and economic subjects (human geography). In several of these countries Geography loses its compulsory status as a result of the planned higher educational pathway that school pupils are likely to select. For example, in the Netherlands, Geography was compulsory until the age of 16 for two hours a week. Then pupils must choose their academic profile. In Portugal, Latvia and Spain after the age of 15 the status of Geography depended on the educational pathway that pupils chose. Compulsory Geography only existed in certain of these strands. In Portugal Geography became an optional subject in secondary schools (15 – 18 years old), it was only located in selected curricular areas. Only these routes allow access to Geography in higher education, namely, humanities and socio-economic studies.

In Cyprus, Greece, Sweden and the UK, Geography was only a compulsory subject until the age of 13-14. After that age it became an optional subject. In the UK this was a post-2000 reform which contributed to a decline in the numbers of students studying the subject at higher levels. The numbers that took the subject at GCSE (aged 16), fell from just over 300,000 in 1996 to around 240,000 in 2002. A similar decline was witnessed at A level (aged 18) with a decline from around 46,000 in 1994 to 34,362 in 2002. In Greece, Geography was only studied for 2 hours a week in middle school and after then the pupils had no Geography education at all in school.

Finally in Malta Geography was only compulsory until the age of 12 and in some states in Germany only until the age of 10-11 years. In Germany the situation is very complex and depended on the region in which the schools are located. But in general, Geography was only a compulsory subject for the whole of the country until the age of 10/11 years, the start of secondary school. In some regions and in certain types of schools Geography might be compulsory for some year groups in secondary school.

The huge diversity in provision demonstrates that the important knowledge, skills and competences that the study of Geography provides are not recognised as essential in the educational portfolio of secondary students in Europe. Indeed, there has been considerable concern over the lack of geographical knowledge that students demonstrate (Convey, 1999: Healey, 1999). Recognition among decision-makers of the importance of the discipline has been said to be important if and where Geography comes under threat following curriculum reform and diversification (Brown, 2002). Indeed in countries like the Netherlands, where school Geography has, historically, been very strong it still remains under significant political pressure (Oost & Kanneworff, 2000) which resulted in a range of strategies that were being undertaken to boost geography’s position and image.

Many respondents commented that schools and colleges did not necessarily look to appoint Geography teachers with formal geography training. They often wrongly assumed that any teacher could ‘pick up’ enough Geography to teach the subject (Grimwade, 2000). It is vital that teachers of geography should know their subject (IGU-CGE, 1992) as research from the USA has provided suggestions of potential dangers to Geography if this approach is allowed to continue. The replacement of Geography by Social Studies in the mid twentieth century led to a massive setback in the level and status of school geography and the eventual removal of the subject from the top-ranking universities (Bednarz & Bednarz, 2004). As a result, the whole Geography education system suffered severe decline. This is now only slowly being reversed as a result of many state and national initiatives and a positive promotional campaign by subject associations (Clarke & Stoltman, 2000).
Developments in schools tend to follow national rather than European programmes, under the European principle of subsidiarity. There has been a predominance of national school curriculum innovation based on the influence of Pisa studies (Goldstein, 2004). As a result this has been closely related to increased curriculum time for numeracy and literacy. Geography at school appears to have become a contested academic discipline (Stengel, 1997), where the amount of time available for geographical studies and therefore the curriculum status of the subject has been reduced in secondary as well as primary schools.

Respondents reported that geoinformation and the use of GIS technologies and methods were not being implemented at all in schools except through the efforts of a few individual teachers. The national or regional educational system had not at this point in time recognised the importance of GI and spatial literacy in education. It is therefore important that schools in Europe are encouraged to work with universities, with teacher-trainers and with teachers to make Geography an integral part of national education. Teachers also need to be provided with suitable opportunities for professional development so that they can upgrade their knowledge, skills and understanding.

3.32 State of Geography in higher education
Unlike the situation in schools, higher education Geography is not a tightly bounded discipline with a fixed curriculum. The Geography department is not the only structural unit where Geography is taught. The learning and teaching of Geography and academic geographers tend to be found in a very broad range of contexts and situations. Geography as a discipline also offers an extremely wide variety of subject matter and methodologies of analysis. Generally in Europe, Geography is considered to be a popular and respected subject in higher education, though there are predominantly limited and inaccurate views of what the subject is and what geographers do. This section presents the state and perceived status of Geography. It draws information from the attraction of the subject to applicants and the perceived national status of the subject.

3.321 The number of applicants for Geography in higher education
The number of applicants to study Geography in higher education was considered to be a useful measure of the relative health of the subject. While Geography departments may be in a position to expand, it is worth noting that in many countries the number of places offered to study Geography in universities was fixed at local, regional and even national level. So the total number of available "places" was stable,

Respondents from seven countries reported a significant decline in Geography in higher education (Belgium, Denmark, France, Germany, Spain, Portugal and the UK). In France, in certain institutions the number of applicants was reported to have declined by as much as 40% in recent years, In Spain the decline was said to be closely linked to the great decline in birth rate since 1976. As a result the total number of university applicants had decreased significantly since 1994 along with the number of geography applicants. In Catalonia the decrease was said to have been around 30%, slightly more than that be experienced by History courses, but similar to natural sciences. In Denmark, the decline was greater in Physical Geography than in Human and Social Geography. The reason for the decline was thought to be related to the creation of new applied university courses like International Development Studies, International Cultural Studies, Social Science, Journalism and Education. All these courses include aspects of Geography but are not named as such. In the UK
the data available was the numbers of applications (not applicants) as each applicant can make up to 6 applications. In total the number of applications was said to be falling. In 1994 there were 50,608 applications to study Geography at university. In 2001 this had fallen to 31,948; a decrease of more than one-third and it fell by a further 5% in 2002. There was thus evidence of a serious decline in applications (and applicants) to UK departments of Geography (Croot et al., 1999; Walford, 2000).

### Table 3.31 Total applicants for Geography in Portugal

(Portuguese Ministry of Education)

<table>
<thead>
<tr>
<th>year</th>
<th>number</th>
<th>year</th>
<th>number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>5692</td>
<td>1996</td>
<td>3653</td>
</tr>
<tr>
<td>1991</td>
<td>5446</td>
<td>1997</td>
<td>3082</td>
</tr>
<tr>
<td>1992</td>
<td>4342</td>
<td>1998</td>
<td>2841</td>
</tr>
<tr>
<td>1993</td>
<td>3139</td>
<td>1999</td>
<td>2552</td>
</tr>
<tr>
<td>1994</td>
<td>4116</td>
<td>2000</td>
<td>2542</td>
</tr>
<tr>
<td>1995</td>
<td>4093</td>
<td>2001</td>
<td>1825</td>
</tr>
</tbody>
</table>

In Portugal the number of applicants for Geography, as noted by the Ministry of Education, had also experienced a significant decline (Table 3.31). This decrease was thought to have been caused by four main factors, firstly a significant ageing of the population, so the total number of students was in decline. Secondly Geography was chosen by students within "Natural-Scientific studies", meaning that potential access to Geography in higher education was narrow and highly selective. The third factor was the growth of private universities, which are not reported on by Ministry data. It is likely that a proportion of applicants will have sought access to Geography courses at private universities as their entry requirements were not so selective. Finally, there was also increasing "competition" from new and related subjects, such as Environmental Engineering (Universidade de Aveiro and Faculdade de Ciências e Tecnologia - UNL), Territorial Engineering (Instituto Superior Técnico - Lisboa), Regional and Urban Planning (Aveiro) and the Architecture of Regional and Urban Planning (Architecture Faculty, Technical University of Lisbon).

In several countries the number of applicants for higher education Geography courses was said by respondents to vary a great deal. There were many different reasons for this which included the marketing and promotion of the subject and reform of the university system. In Italy for example, the situation had remained stable with only universities in Rome and Genova having degrees in Geography, within the Faculty of Arts. In other universities, Geography was a subject linked with other degrees such as History, Fine Arts, Education, Natural Sciences and Economics. From 2001 under the revised 3-5-8 (Bologna) system, nine universities had set up Bachelors level degrees in Geography, with relatively small numbers of applicants. In Ireland, it was very hard to assess the number of applicants as most Geography students took two subjects for their degrees, where these subjects were not denominated on application.

The number of applicants for university Geography courses was said to be stable in many countries, including Austria, Belgium, Estonia, Iceland, Ireland, Italy, Latvia, Norway, Poland, Slovenia, Sweden, The Netherlands and the UK. Growth in applicants was being experienced in the Czech Republic, Finland, Greece, Hungary, Malta, Slovak Republic and Switzerland. In most of these countries this was happening in parallel with a national expansion of the amount of higher education provision and revised education policies. In Portugal the growth may also have been linked to the establishment of courses in private universities.
Finally the case of Cyprus is worthy of special comment as Geography was not recognised as an academic subject in higher education by the Education Ministry. Geography was therefore only a discipline for training teachers.

3.322 The perceived status of Geography in higher education

What is the status of Geography and how can it be measured? Status can be considered to be the position of the discipline in the academic hierarchy. It reflects a combination of what has been achieved by and ascribed to the subject by external review and decision makers. In higher education, measurements of academic status are generally undertaken of research and in some cases of teaching performance, against certain criteria. In the case of research, impact assessment exercises are in place in many countries where citation indices for publications are widely in use. Consensus studies of disciplines have also been attempted to determine differences in research priorities and techniques (Hargens & Hagstrom, 1982). In teaching terms, measures of teaching quality have also been used in an attempt to classify and grade the performance of individuals and departments. In both cases the results may be closely linked to conditions of appointment, tenure and promotion. However it appears that the relative status of a higher education discipline in an academic context has not previously been assessed.

In this research academics were asked to comment whether they perceived that Geography was a major or minor higher education subject in their country. In more than half of the countries Geography was considered to be minor in status. Table 3.32 shows the outcome of these responses.

<table>
<thead>
<tr>
<th>Minor subject – 15 countries</th>
<th>Major subject- 12 countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUSTRIA, BELGIUM, CYPRUS,</td>
<td>CZECH REPUBLIC, FINLAND, GERMANY,</td>
</tr>
<tr>
<td>DENMARK, FRANCE, GERMANY,</td>
<td>IRELAND, POLAND, PORTUGAL,</td>
</tr>
<tr>
<td>GREECE, HUNGARY, ICELAND, ITALY,</td>
<td>ROMANIA, SLOVAK REPUBLIC,</td>
</tr>
<tr>
<td>LATVIA, LITHUANIA, MALTA, NORWAY,</td>
<td>SLOVENIA, SPAIN, SWITZERLAND,</td>
</tr>
<tr>
<td>SWEDEN</td>
<td>UNITED KINGDOM</td>
</tr>
</tbody>
</table>

Comments on the nature of Geography as a minor subject included:

- There are only a few university institutes where it is taught (Austria)
- Only three universities provide a full Geography degree (Belgium, Walloon)
- No there are no Geography departments at the university (Cyprus)
- Out of the 5 Classic Universities, there are only three Geography departments. Geography is not and has never been a major subject in higher education (Denmark)
- No, it is a not a major subject but Geography exists in all the major universities, sometimes in the “Letters” faculty, sometimes in Sciences. (France)
- It is not a major subject, because informatics, economics, law and other market oriented subjects are much more fashionable and attract more applicants nowadays. But despite of this Geography is still a popular subject. (Hungary)
- No there is only one department (Iceland)
Geography is a traditional subject in higher education, but mainly to become a school teacher. It is not considered a major subject, and departments are usually small. Now, with the decline of the subject in schools, the challenge has been to find new fields of application for the subject (e.g. regional planning, development sciences, intercultural studies, tourism management, environmental planning, etc.). In most cases, we have geographers in departments or institutes with different names and working with other disciplines such as economics, geology, social sciences and history. (Italy)

Geography isn’t considered a major subject in higher education, the priority of higher education at the moment is IT studies. (Latvia)

No, it is not, though the number of departments has increased by establishing geography departments in the new universities. (Lithuania)

No, it is still a minor subject with one division at University and only two departments at Junior College and another private sixth form. (Malta)

Geography is quite a small subject. We have only three departments at University level in Oslo, Bergen and Trondheim. (Norway)

No it is not a major subject, rather it is divided into institutes that focus on different aspects, physical and human geography. (Sweden)

Comments on the major nature of Geography included:

Geography is a major subject in the Czech higher education. There are 15 departments of geography at 8 universities. All of them prepare geography teachers, Prague and Brno has master degree of expert geography (Czech Republic)

Yes. There are Geography departments in the universities of Helsinki, Turku, Oulu, and Joensuu. In addition, there are Department of Regional Studies and Environmental Policy in Tampere University, Department of Regional Studies in the University of Vaasa and Helsinki School of Economics. (Finland)

Geography itself is a major subject in higher education; there are more than 80 Geography departments in German Universities. Sometimes Geography belongs to a Geoscience Faculty, sometimes to a Natural Science Faculty and sometimes to a Social Science Faculty. (Germany)

It is a major subject in higher education. There are five university departments and it is a major subject in several Colleges of Education - both for classroom teaching and as a subject in their BA degree programmes. (Ireland)

Yes, Geography as separate subject of study is on 14 Universities or Pedagogical Academies. (Poland)

Difficult to say, the most "important" public Universities have Geography Departments. Then there are also the "competing "geography engineering subjects". Yes, in Portugal Geography is a major subject in higher education. .... Geography is also taught in other institutions or organisations, namely, in the departments of architecture, territorial engineering, public administration and of town and country planning. (Portugal)
Yes. Geography holds departments in almost all university centres, independent or associated with Geology, Biology, Chemistry or History. Economic higher education institutions also include Geography Divisions. Geography is an academic discipline, self-recognised, integrated in Geo-Sciences. (Romania)

Geography is major subject in higher education. There are eight departments of geography in Slovakia (Slovak Republic)

In Spain there are 46 University Departments of Geography, five of them in Catalonia. Some Universities have more than one department (Physical, Human or Regional Analysis), the majority have a big department with different research Units. We have also to mention the Departments of Didactics of Social Sciences, where all the teachers and researchers in school geography teaching belong. There are 40 of these Departments in Spain, 7 of them in Catalonia. (Spain)

Seven University departments; geography is a major subject compared to other natural sciences; compared to the social sciences it has less applicants. Climatology and hydrology are separate programs of study offered by the Swiss Federal Institute of Technology in Zurich. (Switzerland)

There are currently 100 departments offering geography degrees in the UK. This has fallen from around 120 ten or so years ago. The decline in institutions has not been as rapid as that in applications but has gathered speed in the late year or so. Mergers of departments are becoming common. Currently, there are 2378 undergraduate courses listed in geography, geology and earth sciences at approximately 95 different HE institutions. (UK)

These responses showed that there was a remarkable lack of a unity in how Geography as a subject is perceived. This diversity is probably due, in part, to the disciplinary development routes characteristic of the different countries of Europe. It was likely that disciplinary perceptions were significantly influenced by whether the subject was, in the past, aligned with natural or social sciences, or whether certain multidisciplinary or interdisciplinary conceptualisations have been dominant. The practical nature of the subject, expressed by Geography through fieldwork studies and laboratory techniques, may have led to Geography having difficulty in gaining acceptance within the ‘pure’ science establishment. As a result Geography may have been marginalised and accorded low status. This may have influenced its positioning in relation to other subjects in terms of the allocation of power, resources and funding.

A number of additional comments were made by respondents when considering whether Geography was in a state of growth, decline or stability was difficult.

Difficult to answer with only 3 full geography degrees (Belgium)
It is non existent except as a subject in teacher preparation (Elementary Education program, University of Cyprus) (Cyprus)
Applied geography disciplines (as GIS) are growing (Czech Republic)
Increasing due to the popularity of geo-informatics (Finland)
Geography in higher education seemed to have been stable for a considerable time in terms the number of Geography students at all universities. But now the number of students is growing, but not the number of university teachers. There are some cases where a
Geography Department has been closed or combined with another one. (Germany)
Growing, it is indicated by the increasing number of students (Hungary)
Long term comparison is difficult. Within the 2 yrs of the new system, it seems growing, both as far as Geographical degrees and as Geographical subjects within different degrees. Anyhow, it is a "niche" subject (Italy)
Growing. Mostly because of a growing number of universities offering this discipline and education. Though geography is still not a common discipline for students from different faculties and specialities (Lithuania)
Is it growing with only three students graduating in 1995 and 28 graduating in 2002 (Malta)
We believe we have passed a bottom, and probably the number of students in Geography will grow the next years. But from autumn 2003 a so-called "quality reform" is implemented in the higher education system. Bachelor- and Master-programs are introduced (Norway)
Bearing in mind that some private Universities and competing "applied" (management, planning, engineering…) Geography courses emerged, the offer was amplified. In that sense the weight and general interest could be considered as having increased. As environmental issues, planning, land management and conservation are significant and popular issues, which should also contribute to a bigger "visibility" of Geography, in all its forms. (Portugal)
Stable, after a strong flourish between 1990 and 2000 (Romania)
It is growing in higher education (establishment of the third Department of Geography, introduction of postgraduate study at Faculty of education in Maribor, setting up one-subject study of Geography at Faculty of education in Maribor). (Slovenia)
Geography has increased its area of influence because of new degrees (Tourism Management) with Geography in their curriculum. (Spain)
Geography is in decline in Higher Education (The Netherlands)
Applications evidence points to a marked decline in the subject at university level. However, those institutions that are 'surviving' continue to have some of the lowest 'drop-out' rates of any subject; have some of the best graduation rates and students obtain a wide range of good careers. Thus the subject remains very healthy both in terms of its teaching and research. (UK)

Respondents also commented on the likely future perceived state of Geography compared with other disciplines taught in higher education. These results are shown in Table 3.33.
Table 3.33: The likely future perceived state of Geography in higher education

<table>
<thead>
<tr>
<th>Decline (7)</th>
<th>Stable (17)</th>
<th>Growth (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELGIUM</td>
<td>AUSTRIA</td>
<td>CZECH REPUBLIC</td>
</tr>
<tr>
<td>DENMARK</td>
<td>BELGIUM</td>
<td>LATVIA</td>
</tr>
<tr>
<td>FRANCE</td>
<td>CYPRUS</td>
<td>LITHUANIA</td>
</tr>
<tr>
<td>ITALY</td>
<td>ESTONIA</td>
<td>MALTA</td>
</tr>
<tr>
<td>NORWAY</td>
<td>FINLAND</td>
<td>PORTUGAL</td>
</tr>
<tr>
<td>THE NETHERLANDS</td>
<td>GERMANY</td>
<td></td>
</tr>
<tr>
<td>UNITED KINGDOM</td>
<td>GREECE</td>
<td></td>
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<td></td>
<td>HUNGARY</td>
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<td></td>
<td>ICELAND</td>
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<td>SLOVAK REPUBLIC</td>
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<td></td>
<td>SLOVENIA</td>
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<td></td>
<td>SPAIN</td>
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<td></td>
<td>SWEDEN</td>
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<td></td>
<td>SWITZERLAND</td>
<td></td>
</tr>
</tbody>
</table>

3.33 Aspects of learning and teaching in Geography departments

There are many aspects of the learning and teaching that take place in and beyond Geography departments. This section looks at the main teaching and learning approaches in departments, the courses offered by departments and the fieldwork, GIS, regional studies and international activities taking place in departments. Departments should seek to provide suitable geographical learning environments for the 21st century (Healey & Jenkins, 2001).

There is a diversity of departments and the courses and curricula that they offer. As there are no benchmarks across Europe or professional bodies to shape what is taught and how it is done, each institution can be said to offer a unique curriculum. It is therefore not surprising that knowledge about what Geography is and what geographers do is limited. Lower level classes will tend to be more generic and higher level courses will normally be linked to research interests. What is offered will thus usually be closely linked to the interests and expertise of academic staff, but also to external factors. Individual courses may be connected to local humanist, environmental (or physical conditions, whereas some departments may choose to emphasise these connections or as a specialist unit. The importance of the learning and teaching Geography curriculum has never been so great considering the extent of higher education reform and European enlargement.

This research about teaching methods and learning processes should be set against the context of the Bologna process, which seeks to establish throughout Europe a three-fold, Bachelors-Masters-Doctorate system (Commission of the European Communities, 2003). Underlying this is the desire to make European higher education the best and most competitive in the global marketplace. The educational transformation is to be based on establishing learning outcomes for courses, quality assurance and ensuring that the resulting qualifications relate closely to competences which should match the needs of employers. The Bologna process should generate reflection on learning and teaching approaches leading to fundamental pedagogical changes to ensure that student-centred learning approaches are developed (Chalmers, 2005).
3.331 Teaching methods, learning approaches
The context of teaching in a growing system of higher education means that suitable methods and approaches need to be established. As mentioned earlier, Geography connects with the natural, social and humanistic sciences. It is therefore to be expected that Geography exhibits the characteristic methods of learning and teaching associated with these areas. Methods of learning and teaching Geography will also reflect also the spatial nature of the subject, where fieldwork would be expected to be a regular feature of geography courses (Foskett, 1999) and also GIS (Donert, 2005). There is however no unique answer to dealing with geographical issues. There are many different ways of stimulating students.

Teaching and learning approaches are likely to depend mainly on the aims and objectives of the course programmes in place and the personal philosophy, experience and expertise of individuals and groups concerned in developing them. There are a wide range of feasible, alternative strategies available. It is thus important to recognise the value of the wide diversity in learning and teaching that exists in throughout most departments and in all parts of the subject. It is important to recognise also that any decisions that are made locally are nearly always based on practical considerations and compromises. The main teaching methods employed in Geography departments are shown in Figure 3.31.

Lectures (small and large) dominated the student experience in most departments (Agnew & Elton, 1998) with seminar discussions and group work activities also common in small-class situations (Birkill, 1997). Individual tutorials were much less common as a main teaching approach. The study of Geography emphasises teaching in the field or fieldwork. Fieldwork would be conducted in situ and it would commonly involve the collection of information normally using surveys and observations. There were many different types of fieldwork activity undertaken (see section 3.35), which could include day trips, visits, and residential trips. A lot of field courses would be connected with data gathering about specific locations, based on individual and group research. Fieldwork is also commonly undertaken so that students can gain experience of using specific equipment or certain field techniques.

Computer technologies open up new means of delivering higher education courses without being limited by geographic boundaries (Kroder, Suess, & Sachs, 1998). They also provide educational opportunities to interact and learn or study with others. Geographers have been at the forefront of Computer–Assisted Learning (CAL) developments (Donert, 1997) however in almost two-thirds of the departments surveyed, students were rarely actively encouraged to use computers in support of their learning. So, the obvious benefits offered by information availability, representation possibilities and opportunities for communications through ICT in the learning process were under-represented.
Learning approaches are at the heart of the Bologna process and in improving the quality of higher education in Europe. Thus the significance of the perceived main student learning approaches is very high. Only about half of the departments recognised student-centred learning as a main element of their courses.

The breadth of learning and teaching opportunities characterises the geography curriculum (Jenkins, 1998). The variety in these approaches is essential for the well-being and vigour of Geography.

Higher education reforms under Bologna highlight the significance of new curriculum and innovative course developments (González & Wagenaar, 2005). The survey sought to identify what were the main departmental needs for such course transformations (Figure 3.33). Good resources were said to be of great importance in most replies.

_We need more geography teachers; geography resources and maps, interactive web sites and geography databases available to all users. The basic problem is the lack of education aids - maps, photos, etc. There are many geography-rich sites in the web but most of them are not made for education use._ (Greece)

_Better course books in some subjects. Access to databases with good cases studies in geography and exercises/fieldwork practice._ (Iceland)

_Access to recent academic journals; improved library facilities with multimedia materials._ (Romania)

Opportunities for networking in the sharing of resources were highlighted.

_It would be good to have access to a wider variety of resources, plus sharing of ideas with others._ (Ireland)

_Europeaising our Geography curriculum is important. We need to develop geography learning resources perhaps which we can do_
collaboratively with others and develop Web-based resources. (Latvia)

My main needs are sharing good examples of applications, which I can adapt to my courses. (Estonia)

**Figure 3.33** Departmental course development needs

![Needs for geographical course development](chart.png)

It is widely commented on that computer technologies have the potential to transform education by generating innovative learning and teaching situations (Donert, 2006; Jager & Lokman, 1999; John & Sutherland, 2004). Innovations in information and communications technologies (ICT) suggest that there are considerable opportunities not only to enable much wider access to higher education (Acker, 1995), but also in providing the ability to support learners as and when they need it (Buckley & Donert, 2004) and from any possible location (Singh, 2005). So in Europe many higher education institutions have planned to respond to these new student demands, specifically by providing courses and qualifications that suit the rapidly changing online opportunities (European Commission, 2005).

The results of the state of Geography survey showed that there was considerable intention to provide ICT and elearning into degree courses. The purpose was to promote modern education approaches. Respondents however called for improved access to powerful computer networks, as well as access to and widespread use of managed learning environments.

*Better access to on-line journals; foreign textbook availability; on-line learning systems. We need the opportunities offered by the Internet.* (Poland)

*Access to online journals, journal subscription for some areas is very (very) low. We need the WWW for images, demos., etc., specifically for physical geography, land use, remote sensing subjects.* (Portugal)
Online Learning. Group activity in co-operative learning methodology. I am teaching geography in development studies to non resident students. (Italy)

They suggested that if universities were to develop an integrated computer-based approach to providing relevant learning, then obtaining professional development in the use of information technology was also an issue.

We need tertiary pedagogic teacher training. Support to establish higher level GIS courses with online support. We need international cooperation, conferences and seminars on using the Internet. (Czech Republic)

I need to find ways of supporting online activities and discussions. Learn how to use of video and audio online. Training for staff to develop. (UK)

Learn how to make online learning effective. (UK)

I need courses on innovative approaches to teaching geography, with a focus on activating students and working online. But the focus on content of courses, should not be forgotten in excitement over new computer technology. (Iceland)

3.332 What Geography courses and research in European higher education?

This section deals with the subject areas that were taught and researched within European Geography departments (Table 3.34). The broad content of Geography courses in higher education can help young people understand our social, cultural, economic and environmental development. In order to recognise the complexity of the issues, the relationships between people and their environments at local, national or international scales is studied. So geographical studies can encourage them to become better citizens (Donert, 2002) as the learning undertaken promotes active engagement and ethical values. Geographical knowledge and understanding prepares citizens to make informed decisions regarding the best strategies to preserve and protect fragile landscapes, land uses and resources. Geography also provides important clues to the past, as landforms and climate are related to the rise and fall of civilizations. How people use the land has had a strong bearing on the economic progress of regions (European Commission, 1994). So, geographical studies offer a broad range of opportunities to engage with contemporary issues in European society.

Table 3.34: Teaching and research in Geography departments (in alphabetical order)

<table>
<thead>
<tr>
<th>% departments</th>
<th>Teaching</th>
<th>Research</th>
<th>% departments</th>
<th>Teaching</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Geography</td>
<td>48%</td>
<td>34%</td>
<td>Leisure Geography</td>
<td>50%</td>
<td>37%</td>
</tr>
<tr>
<td>Biogeography</td>
<td>55%</td>
<td>37%</td>
<td>Life-long Learning</td>
<td>15%</td>
<td>3%</td>
</tr>
<tr>
<td>Cartography</td>
<td>82%</td>
<td>32%</td>
<td>Mathematical Geography</td>
<td>34%</td>
<td>6%</td>
</tr>
<tr>
<td>Climate</td>
<td>73%</td>
<td>34%</td>
<td>Physical Geography</td>
<td>94%</td>
<td>60%</td>
</tr>
<tr>
<td>Coastal Marine</td>
<td>35%</td>
<td>29%</td>
<td>Political Geography</td>
<td>65%</td>
<td>34%</td>
</tr>
<tr>
<td>Cultural Geography</td>
<td>66%</td>
<td>53%</td>
<td>Population Geography</td>
<td>68%</td>
<td>45%</td>
</tr>
<tr>
<td>Subject</td>
<td>&gt;65%</td>
<td>&lt;65%</td>
<td>Subject</td>
<td>&gt;65%</td>
<td>&lt;65%</td>
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<tr>
<td>-------------------------------</td>
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<td>------</td>
<td>-------------------------------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Economic Geography</td>
<td>74%</td>
<td>53%</td>
<td>Professional Training</td>
<td>34%</td>
<td>8%</td>
</tr>
<tr>
<td>Environment</td>
<td>85%</td>
<td>61%</td>
<td>Regional Geography</td>
<td>77%</td>
<td>47%</td>
</tr>
<tr>
<td>Geography Didactics</td>
<td>65%</td>
<td>35%</td>
<td>Remote Sensing</td>
<td>61%</td>
<td>35%</td>
</tr>
<tr>
<td>Geomorphology</td>
<td>79%</td>
<td>55%</td>
<td>Rural Geography</td>
<td>66%</td>
<td>48%</td>
</tr>
<tr>
<td>GIS</td>
<td>73%</td>
<td>48%</td>
<td>Social Geography</td>
<td>69%</td>
<td>60%</td>
</tr>
<tr>
<td>Historical Geography</td>
<td>55%</td>
<td>35%</td>
<td>Teacher Training</td>
<td>74%</td>
<td>42%</td>
</tr>
<tr>
<td>Human Geography</td>
<td>82%</td>
<td>58%</td>
<td>Transportation</td>
<td>48%</td>
<td>26%</td>
</tr>
<tr>
<td>Hydrology</td>
<td>55%</td>
<td>37%</td>
<td>Urban Geography</td>
<td>77%</td>
<td>53%</td>
</tr>
<tr>
<td>IT in Geography</td>
<td>53%</td>
<td>19%</td>
<td>Work-Based Learning</td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td>Land Use</td>
<td>63%</td>
<td>40%</td>
<td>Other</td>
<td>61%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Figure 3.34:** Geography teaching areas in more than 65% of departments

**Figure 3.35:** Geography teaching areas in less than 65% of departments
There were many common components to learning and teaching Geography in higher education (Figures 3.34 and 3.35). The main problem with describing degrees and curricula in Geography is the vast multiplicity that exists in the overall provision of Geography and also within almost every component.

The most commonly found elements in most academic programmes were general introductory courses in Human, Environmental and Physical Geography. The humanistic components cover topics like Economic, Social and Cultural Geography. Areas like Geomorphology, Soils and Climate will be commonly found in scientific programmes. Most Geography departments offered courses in all three preliminary areas. They also had applied or linked courses that sit astride the human-physical divide, for example, environmental courses that considered environmental factors, like ecology and the human impacts that affect the environment, through concepts such as hazards, management and sustainability.

The main teaching and research areas as classified by Human, Physical and Applied Geography are presented in Figures 3.36 and 3.37 respectively.
Departments also offered many different skills-based courses and professional courses (Figure 3.38). Main skills areas included fieldwork, scientific, laboratory or practical studies, IT in Geography, GIS and remote sensing. Some professional courses were also common, including planning, pedagogy and teacher training. Courses related to work-based and lifelong learning were found in only a small percentage of department programmes.

The survey sample produced a very wide range of geographical research areas covering all the major types of Geography studies (Figure 3.39).
**Figure 3.38:** Skills-based Geography courses in higher education

**Skills in European higher education**

**Geography**

![Bar chart showing the percentage of departments offering skills-based Geography courses in higher education.](image)

**Figure 3.39:** Geography research in higher education

**Main geographical research areas in European higher education**

![Bar chart showing the percentage of departments conducting research in various geographical areas.](image)
Geography courses based on specific regional locations were also common. Their main focus might be on some specific geographical, aspects such as development studies, water quality, planning or political change. Alternatively, regional courses may include both scientific and humanistic aspects. Without access to detailed programmes the precise nature of these courses will be difficult to ascertain.

Some examples of the range of responses included:

- Many regions in Norway, Sri Lanka, Ethiopia, Tanzania, Nepal, Thailand, India, Ghana, Madagascar, Bangladesh, Africa south of Sahara (Norway)
- Galicia, Northern Portugal, Latin America (specially Brazil) (Finland)
- Czech Republic, Central Europe, European Union, Macro-regions of the World, Continents (Netherlands)
- Madrid, other regions (this academic year it is Cataluna), Spain, Europe, Latin America. There is also a class about regional problems of the world. (Austria)
- The European North (Spain)
- The whole world (Czech Republic)

Courses on Europe, European and local/national regions were by far most commonly found in Geography programmes (Figure 3.310). This is not surprising as local and European studies in geographical education can play a unique role in helping understand Europe. Due to the ‘contemporary’ nature of much of its curriculum, Geography relates very closely to key issues facing Europe. These might include for example studies of European environments, European identity, cultures, economic change, natural hazards and human responses, landscapes and demographic change. So, a strong European Dimension would also be expected to be found in many other non-region specific courses on offer. Specifically there might be courses which help to establish European citizenship and identity in an enlarging Europe (Donert & Bosschaart, 2002). These studies can provide key skills for lifelong learning, for example spatial skills and the concept of place, which are of paramount importance to students in Europe as boundaries disappear and enlargement processes continue.
3.333 Teaching courses in non-native languages

In Europe under the Socrates-Erasmus programme (1993-1999) studying in non-native languages was a priority. The European ideal of being mobile across a borderless landscape is thus enhanced if courses in other languages are offered.

More than half of the Geography departments (31 of 60) taught courses in a language other than their own, nearly all of these departments (26) taught some courses in English. Only two departments taught Geography in more than two languages. An additional 13 departments had plans to develop courses in another language, in nearly all cases in English.

Courses from visiting international guests were quite common, as were postgraduate language developments.

*Depends on which guest professors are teaching (Austria)*

No. But there are some lectures (by foreign professors) in foreign languages, mainly English. We are already preparing syntheses of our lectures in foreign languages if there is a need, we have basic materials translated and we have plans to teach courses in English and German (Slovenia)

*We are planning to develop an MSc program in English (Bulgaria)*

Yes, there are plans to offer post-graduate courses in English (Greece)

No, we don't have plans to teach courses in another language than Portuguese in under-graduate courses. However, in postgraduate
courses, besides English and French, some seminars are also taught in Spanish (Portugal)

Some departments taught courses in English to international students and especially those on Socrates-Erasmus mobility programmes normally with ECTS credit transfer. Being able to teach in English provides opportunities for bilateral exchanges.

We teach in English for foreign students (i.e. ERASMUS) and for Hungarian students in case of guest lecturer's courses (Hungary).

English, but we want to keep Danish as an academic language (Denmark)

Yes, we have also now an international class teacher path where nearly all courses are in English (Finland).

Yes, it does. We are planning to have several courses in English next year, for foreign students first of all. (Lithuania)

3.334 Online courses
Bologna and eEurope imply that online education will need to be central to the creation of a European Higher Education Area by 2010. However the survey showed that only 29% of departments offered courses or in a few cases whole programmes online. Most of the major online course developments were in north and west-European countries or were offering courses to very distant learners, for example based around consortia initiatives like UNIGIS.

We are involved in the UNIGIS Masters distance course on GIS. (Czech Republic)
We have distance online courses in a very limited form (a part of further education GeoAtest) (Czech Republic)
We have a lot of experience in providing online courses at a distance. Yes, I am using online learning eg. In Environmental Education and in Biology and Geography subject teacher training. Parts of these courses are on the Internet. (Finland)
Course information is on my home page. We are developing some more courses too (for example local area as a resource for studying) (Finland)
One online/distance Masters course 'Myths and Narratives in Environment and Development' established 2002 with students from 7 countries. Two more to be developed this year (Norway)
We offer online courses in Physical Geography (1/4 year study) and in Human Geography (1/2 year study) In addition "Environment and population in Africa" as part of a multidisciplinary study program in "African Studies" (Norway)
Yes, but we offer only small parts of our courses, mostly through online announcing of textual materials for study. The system for online courses is being created at university level and will be completed next year. (Slovenia).
The Faculty of Education offers some online courses. I teach an online course on Geography of Europe, (Spain)
Yes the Geography degree is also offered online. At present, students can take 110 credits (out of 300) online. Next year it will be enlarged to 150 and the whole online course by the 2006-2007 academic year (Spain).

Yes, some lecturers have online courses which means students don’t have to come in to classes some days. (Netherlands)

A further 17% of departments said they there were discussing or that they had plans to develop or introduce online courses, but more than half of the Geography departments did not have any plans for online course developments. In some cases there were national e-initiatives, or a lack of framework, staffing or expertise to develop online courses.

No, but the national Open University is offering several courses online; The e-University will introduce several courses next year (Estonia).

No, we do not offer online or distance courses, such curriculum has yet to be developed. There are three types of courses: regular, evening and corresponding. (Hungary)

No, but we used to have common distant education courses with Turku university, Finland. (Lithuania)

Some of the undergraduate and postgraduate subjects make extensive use of Internet study sources and for example Powerpoint presentations of lectures, guidelines for exercises and practical projects or fieldwork. There are no online courses in the proper sense of the word. (Slovenia)

Not at this moment. There is a national university for online distance courses. (Spain)

No longer, because of lack of staff and technical assistance. (Iceland)

No, it was planned but not executed (Netherlands)

No. There is currently no legal framework for this in Cyprus. However 2 months ago we initiated the process and there is strong interest in developing an eLearning Infrastructure with potential for supplementing traditional teaching procedures but also offering online distance learning courses in the future. Finally there would be a lot of interest for online professional development courses through distance learning for secondary Geography teachers. (Cyprus)

3.335 Fieldwork in Geography departments

Understanding the environment demands field enquiry so field skills are an essential element of most higher education geographical programmes. Research into the fieldwork process supports the idea of enhanced learning from ‘active’ as opposed to ‘passive’ experiences (MacKenzie & White, 1982). Fieldwork plays an important role in developing both geographical and lifelong learning skills of enquiry, cooperation and teamwork and in individual initiative. Fieldwork has an impact on a wider understanding of geographical concepts. Field courses frequently use less conventional methods of assessment such as posters; reports and field notebooks. Fieldwork can also be an obligatory requirement of a dissertation study or extended essay.
The importance and significance of fieldwork was recognised and well-documented by many survey participants.

Field practices are designed to reinforce the theoretical knowledge and to obtain practical experience of research and monitoring in field. (UK)

Students acquire practical skills in organising of research, working with special equipment, sampling of geographical data (soil, geology, vegetation, hydrology, climate etc.), statistical analysis and IT-based post processing of obtained data. (Latvia)

The survey showed that a wide variety of obligatory and optional fieldwork courses and field activities that were being undertaken, the range of locations that were being used, as well as the types of fieldwork situation that were being experienced in some of the different Geography departments.

We offer research excursions, practical fieldwork, training excursions, didactic projects, research projects etc. Worth mentioning is the obligatory international excursion every student has to take, This year International fieldwork excursions are offered to Laos Thailand), or Cyprus, or Scandinavia (Austria)

The main fieldwork we do is a one week residential course for the years 3 and 4 combined. One year the fieldwork is organised in Spain and the next year in Belgium. Students contribute 50% of the total costs (Belgium)

The faculty has a very well-equipped field training station with 25 beds, meteorological station and computer facilities. (Bulgaria)

It is entirely student funded unlike all other provisions for studying at the University of Cyprus. Hence it stands out in the eyes of the students as expensive even though it is not. It was initiated in collaboration with a local environmental field centre. It is sustained entirely by their efforts with no real support from the university. (Cyprus)

The compulsory fieldtrip is to a high degree paid by the university, except for fieldtrips outside Europe, where the students pay about half the costs. (Denmark)

Because of the large number of the students during the first two years of training it is difficult to make fieldwork compulsory even though we think it is necessary. In general during year 4, students find their own resources in order to perform their own fieldwork. (France)

The regional excursions and fieldwork activities are "low-cost"-activities to keep them very cheap for the students. In most cases the equipment is brought by the students themselves. (Germany)

The fieldwork takes place on a mountain near the city. The only expenses are the public transportation expenses covered by each student separately. The fieldwork lasts for two days, five hours per day. (Greece)

Real problems are related to numbers – we have 300 1st year students, this makes even single day visits very difficult to organise - particularly in terms of time. The fact that students work part-time can
make it hard for them to participate at times. Cost can be a problem for some. (Ireland)

Local and regional FW is regularly carried out, financed by the Dept. and the Faculty. National and international fieldwork is subject to extra-financing; therefore, not regularly performed. (Italy)

There is no fieldwork associated with the classes. When undergraduate students attend our courses, we strongly recommend that on top of studying the curriculum, they should work on an individual essay, in which case some fieldwork may be required. Fieldwork is always required when students work on their final dissertation or thesis. (Italy)

Fieldwork provision is rather poor. Mostly we have to use equipment inherited from soviet period. (Lithuania)

Malta is an ideal fieldwork laboratory therefore since it is small, costs of transport and location are not high. Resources have been focused on the purchase of equipment. The main problems are time allocation within the whole course. (Malta)

Fieldwork is given a high priority in the Department. The Department gets extra money to accomplish fieldwork, but it is not enough to cover all costs. (Norway)

In the fieldwork we include fieldtrips developed along one or more days in a regional or national context. Some fieldtrips are compulsory and are paid for by the department. However, others are optional and given the lack of financial resources of the department, are totally supported by students. Other fieldwork activities are also developed by students in the context of the research seminar and with other subjects, curricular units integrated, above all, in the last years (year 4 and 5). (Portugal)

Fieldwork is compatible with department research agenda and locations. The costs tend to be paid from research grants (institutional, national or international) (Slovak Republic).

We have our own field centre which is used for induction courses and specialist fieldtrips. We also use a number of other residential centres. Many courses also offer site visits and day trips. All students do a compulsory field course in the first and second year of their studies. We also have optional field courses overseas. (UK)

Internationally, the results of this survey concur with research carried out by Foskett (1999) which showed that the position and types of fieldwork offered to students in the Geography curriculum is highly variable. Indeed in more than half of the departments the status of fieldwork was not rated as good (Figure 3.311).
In the vast majority of departments resource constraints, especially in terms of costs and equipment, meant fieldwork was a low priority or there were severe restrictions on what was feasible (Figure 3.312).

Costs are too high and that's the reason why we cannot do fieldwork very often. (Finland)

On fieldwork the students use the equipment of the Department (GPS, theodolite, different corers, lab equipment etc.) The costs are covered by partly the Faculty, the Department and the students, sometimes by additional funds. (Hungary)

The main problem is that there is no special funding for fieldwork, so students usually have to finance themselves. There some extra funding for PhD students going to study abroad. (Italy)

There is big trouble with insufficient funds for fieldwork, so the fieldwork is shorter than 5 years ago and is located usually closer to the university. (Poland)

Students have to personally pay most costs needed for fieldwork. That is a disadvantage and that's why our fieldwork is mostly reduced (in time and location) to local, national level and occasionally neighbouring countries. There's also a lack of equipment – most work has to be done in large groups. We would prefer to have more fieldwork (Slovenia)

Fieldwork is almost entirely financed by the students. Equipment for fieldwork, when necessary, is usually provided by the Department of Geography. (Slovenia)

Fieldwork costs are covered by the students. Equipment and other resources are covered by the department. (Spain)

We have a lack of basic field equipment, lack of funding for basic fieldwork needs (Sweden)
There were also legal, logistical and administrative issues.

*It is difficult to arrange suitable timetables because students have different subjects and there is no time when they are all available. We have also equipment problems because of lack of money.* (Finland)

*The shortage of funds forces us to limit strictly the fieldwork; partially fieldwork costs are covered by students The amount of fieldwork a student does depends on the curriculum courses they choose.* (Poland)

*We do not organize field trips with our regular students because of administrative problems however we have some site visits with our international students* (Spain)

*Students pay for their own travel and accommodation costs. We are also concerned about legal and safety issues.* (UK)

3.3.3 GIS and Information Technology

The state of Geography survey suggested that computer use was mainly by academics to prepare courses rather than the ICT being integrated into the courses themselves. The main activities were commonly stated as the preparation of better materials, and collecting examples and resources for lectures. Academic geographers seemed to have lost touch with modern student-orientated learning environments.

The survey concluded that Geographers teaching in higher education:

- should expect to include ICT as part of promoted learning approaches
- should consider how e-learning changes the way that higher education Geography learning takes place and
- must consider the potential of new technologies in geographical education
- should undertake research if they are to maximise online pedagogical opportunities in teaching exciting, authentic and relevant Geography in higher education.

Technology-based teaching and research are summarised in Tables 3.35 and 3.36 respectively. It shows that courses in GIS were offered by almost 90% of universities and over 60% also provided courses in Remote Sensing and IT (Information Technology) in Geography. Two-thirds of those departments teaching GIS also undertook research in that area. 40% of the universities also provided professional development courses and one quarter provided work-based learning opportunities for their students. Therefore, technology-oriented Geography courses had been developed in most academic departments, while only one teacher training institutions had incorporated GIS.

<table>
<thead>
<tr>
<th>Teaching activities</th>
<th>Number of institutions</th>
<th>GIS</th>
<th>Remote Sensing</th>
<th>IT in Geography</th>
<th>GIS and RS</th>
<th>GIS, RS and IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher education, universities</td>
<td>51</td>
<td>45</td>
<td>38</td>
<td>33</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>Teacher training only</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 3.36: Technology-based research activities in the HERODOT network

<table>
<thead>
<tr>
<th>Research activities</th>
<th>Number of institutions</th>
<th>GIS</th>
<th>Remote Sensing</th>
<th>IT in Geography</th>
<th>GIS and RS</th>
<th>GIS, RS and IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher education, universities</td>
<td>51</td>
<td>30</td>
<td>22</td>
<td>12</td>
<td>21</td>
<td>8</td>
</tr>
<tr>
<td>Teacher training only</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 3.37 shows that most departments taught these technology-based Geography courses at several levels. Frequently a basic course was introduced in the first year, usually demonstrating different data sources and some techniques, remote sensing was often also included, but also photogrammetry, cartography, surveying, geodesy and GPS. In many cases this introduction was taught as a skills-based course. More specialised courses in the use of GIS or in developing or applying GIS techniques and approaches were available later on in the undergraduate programmes, indicating course progression. As this survey was undertaken before the transformation of many European degree programmes to Bachelors-Masters systems, several institutions also provided information relating to years 4 and 5 of study. It was also significant that two-thirds of the teacher training only institutions also commented that they organised specific IT-based practical courses for their students.

Table 3.37: IT and GIS practical activities by year of study

<table>
<thead>
<tr>
<th>year</th>
<th>yes</th>
<th>no</th>
<th>response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>59%</td>
<td>14%</td>
<td>27%</td>
</tr>
<tr>
<td>2</td>
<td>66%</td>
<td>10%</td>
<td>24%</td>
</tr>
<tr>
<td>3</td>
<td>54%</td>
<td>12%</td>
<td>34%</td>
</tr>
<tr>
<td>4</td>
<td>37%</td>
<td>8%</td>
<td>55%</td>
</tr>
<tr>
<td>5</td>
<td>12%</td>
<td>8%</td>
<td>80%</td>
</tr>
</tbody>
</table>

The main issues involving IT-based practical work were also researched and this revealed the existence of three main situations. More than a quarter (27%) of the institutions considered themselves to be technologically well-equipped. They commented on the wide range of facilities available for study purposes. Many of them reflected that they were either centrally supported or in several cases the laboratory facilities were self-funded by income-generating activities, like research contracts, EU projects, running professional development courses or else through national funding. One department stated that they housed the national GIS research institute, thus benefiting greatly from this situation. More than half of the institutions (55%) were facing difficulties in maintaining the quality in the technology-based courses they were trying to run. They identified the main issues as a lack of up-to-date equipment, having too few useful resources (including readily available data), financial shortages and low levels or no technical support. The statements provided here identify some of the issues that were being faced:

*Equipment is very poor, we have to use the rooms and the equipment of another department (Austria).*
*There are problems to keep laboratories working due to insufficient funding. (Estonia)*
*Up-to-date laboratory provision has decreased in recent years and facilities now only allow small group work. (Greece)*
Have different GIS labs and computer labs at university level, but there is a lack of funding to update equipment and software. (Iceland)
The laboratory provision is very poor and financing zero. (Lithuania)
We have problems of funding and time within a relatively tight curriculum. (Malta)

A final group of institutions indicated that they were unable to offer any GIS or IT-based activities. Their comments illustrate some of the likely reasons for this.

There are no facilities, equipment or funding for labs or practical work, therefore it is still mainly a theoretical subject. (Italy)
We are confronted with a lack of computer and multimedia equipment. We need specialised computer rooms within the Department of Geography. (Slovenia)
There is a lack of equipment and facilities and hence it is not feasible to include GIS in curriculum. (Sweden)
Large numbers of students make any practical work somewhat problematic. (Romania)

Several responses also noted that, despite the scientific and technological nature of many geographical courses, the obvious needs and student demands for geotechnology rich learning opportunities, the status of Geography at an official level is still considered to be a non-technical or non-scientific discipline, resulting in the situation that the levels of funding supplied to the university do not realistically reflect the needs of the department or indeed of the workplace.

There was a wide diversity of course provision in GIS. This included formal university courses, introductory seminars, public events, workshops, community-based activities, distance learning and public-private partnership programs. These courses now not only address undergraduate and postgraduate level studies but increasingly technical and Continuing Professional Development (CPD) needs. It will also be vital to establish suitable training for professionals and decision makers in the use for example of analysis and visualisation approaches. Significant changes in the availability and need for information by citizens through, for example, eGovernment and eCitizen activities are likely to necessitate even more varied developments, if the general public are to be informed and educated about the role, value and importance of such information (McGarigle, 2001). As GIS education becomes even more diffuse and is directed at new audiences, so professional development becomes vital in understanding what needs to be taught and how to do it in a changing European society.

Surprisingly very few of the professional development courses that had been attended by staff were related to computers or the use of ICT in learning and teaching Geography (Table 3.38). Only a small number of CPD activities had been GIS or GI related. Most respondents suggested however, that geographers in higher education ought to urgently review the potential of GI technologies, consider how GI could transform higher education Geography and that they should attempt to incorporate GIS as part of their courses. It was clear that research should be undertaken in order to understand and promote pedagogical opportunities which could be used in teaching with geoinformation, in order to develop exciting, authentic and relevant Geography in higher education.
Table 3.38: The types of ICT professional development activity undertaken by Geography staff in the previous 2 years

<table>
<thead>
<tr>
<th>Type of ICT CPD activity</th>
<th>Replies</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS</td>
<td>13%</td>
</tr>
<tr>
<td>e-learning course</td>
<td>9%</td>
</tr>
<tr>
<td>specific computer course</td>
<td>4%</td>
</tr>
<tr>
<td>basic ICT course (Office)</td>
<td>5%</td>
</tr>
<tr>
<td>web page development</td>
<td>4%</td>
</tr>
<tr>
<td>Others, non-IT</td>
<td>34%</td>
</tr>
</tbody>
</table>

This research also identified the following four problems in cases where GIS courses were offered in higher education Geography degrees:

- The cost of software: Even though Internet technology now gives an opportunity to reduce these costs, some software programs were still too expensive for many departments to purchase.
- The cost of hardware: It was difficult to buy sufficient high specification computers and computer related-hardware for academic departments. Network-based provision and site licences were starting to reduce these limitations. However expert network support for GI and inadequate IT help remained significant barriers for the campus-wide implementation of courses using geoinformation.
- The costs of maintenance of software/hardware. Contracts were reported to be very costly, especially for smaller departments and keeping abreast of upgrades were a constant headache.
- The shortage of academics that have been educated in the use GIS. Most departments had just one faculty member who usually taught all the GIS-related courses.

The absence of European, national and regional training and support systems for professional development of university teachers was one of the main conclusions of this research. As a result, a number of HERODOT training events have taken place in different European countries. It remains too early to analyse the real impacts of these efforts, but several institutions have now achieved some GIS capacity and staff competence in the use of geoinformation has been improved. In a few cases this has resulted in significant infrastructure investment in GIS. However, for professional development to be really effective it is likely that this training would need to be formalised into career pathways and a progression for university teachers.

Exceptions to the above situations occurred in cases where a regional or national centre of GI excellence had developed. These were created either with national support, or ministry help, or through funded European projects, or else with the support of major software vendors like ESRI who had provided special start-up deals through their national contact points. The latter has been the case in many of the new European countries. Only 27% of the departments surveyed considered themselves to be technologically well-equipped. A few departments reported that they had a good range of GIS facilities for students to use. They tended to be centrally supported with laboratory facilities which were self-funded by income-generating activities, such as research contracts, EU projects and running professional development courses. Three departments had received national funding and one department housed the national GIS research institute, thereby benefiting greatly from this situation. However more than half (55%) of those surveyed that taught GIS
were facing difficulties in maintaining course quality due to technology issues (Table 3.39). They commented mainly on a lack of up-to-date equipment, with too few useful resources (including readily available data), financial shortages and low or no levels of technical support. The establishment of online courses was perceived to be an important new development, as it shifted the onus to the student who needed to have their own suitable equipment. One-year software license packages were common exploited.

Table 3.39: Some technological issues facing GIS course provision

<table>
<thead>
<tr>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Our problems stem from the fact that funding is unreliable. Most years we are not able to update our equipment or facilities.”</td>
</tr>
<tr>
<td>“The problems we face are because we can no longer book the laboratories when we need them. They are being used by others who do not need GIS software”</td>
</tr>
<tr>
<td>“We have difficulties as our equipment is very poor, we have to use the rooms and the equipment of another department”</td>
</tr>
<tr>
<td>The availability of up-to-date laboratory provision has decreased in recent years and facilities now only allow small group work.”</td>
</tr>
<tr>
<td>“We have a number of different GIS labs and computer labs at university level, but there is a lack of funding to update the equipment and software there.”</td>
</tr>
<tr>
<td>“There are always problems to keep laboratories working due to insufficient funding.”</td>
</tr>
<tr>
<td>“The laboratory provision is very poor and financing zero,”</td>
</tr>
<tr>
<td>“Problems of funding and time within a relatively tight curriculum.”</td>
</tr>
</tbody>
</table>

This confirmed that GIS education and training in European higher education was not well developed and needed to be transformed (Rhind & Raper, 2001). The 20th century focus on technological barriers has to give way to pedagogical research and development of curriculum (Longley, Goodchild, Maguire, & Rhind, 2001). To achieve this, professional support systems and training are required (Blake, Davies, Jones, Morris, & Scanlon, 2003). Existing university programmes need to be re-focused and professional courses especially through elearning should be established (Mooney & Martin, 2003; Szablowska-Midor, 2007). Yet in 2007, university departments are still not creating the integrated courses that train, educate and produce enough graduates to meet market demands for well-rounded, knowledgeable GI professionals.

At Masters level, European programmes that involve GIS are undergoing some interesting changes. Students can now choose between three types of programmes, those courses that follow directly from undergraduate study, professional Masters as part of on-going professional training and research-orientated Masters. The target audiences for these courses have different expertise, needs and expectations. A quick review of the aims of some of these courses has shown that they are usually very distinctive, though they may contain some common components. It is also clear that the significance of geoinformation awareness at postgraduate level (Masters, PhD) should not be underestimated. Nevertheless, courses outside Geography that present the fundamental use of geoinformation as a possible tool for investigation are not very common, even though GIS helps provide valuable spatial research and GI methods would be appropriate for many postgraduate and professional development programmes. Core awareness modules therefore should be established for all students who might need to undertake analysis, visualisation and dissemination of their geospatial research results.

3.337 Resources for teaching Geography in higher education
Resource-based learning involves the reuse of available assets to support varied learning needs (Hill & Hannafin, 2001). The concept of resource-based learning is not new, it has often been related to Geography in higher education. (Gibbs, 1992; Haigh & Gold, 1993; Healey, 1992). In some cases existing resources may be consistent with the needs and goals of teachers, however teaching resources are normally located and then adapted to meet the learning needs of the students. The survey demonstrated that the Web as well as academic journals and text books provided the main means for doing this in almost all departments (Figures 3.3371 and 3.3372). Geographical education has also an emphasis on resources based on visual media, especially photographs, slides and video. Though the Web was cited as a major resource, online academic resources including e-Books and e-journals were hardly used at all.

Figure 3.313: The main resources used in teaching Geography (n=62)
3.338 International Activities

At European level, education in general and higher education in particular is not subject to common European policy, the responsibility for the content and the organisation of studies remains at national or local level. The European Commission (European Commission, 2002) thus only has a complementary role to play, by encouraging educational initiatives. According to Article 149 of the Treaty of Amsterdam, the European Community will contribute to the development of quality education by encouraging cooperation between Member States. The aim is to add a European dimension to education, to help to develop quality education and to encourage life-long learning (Moravcsik & Nicolaïdis, 1999).

Healey, Foote and Hay (Healey, Foote, & Hay, 2000) comment on the contradiction between the international status of university research and that of teaching. International cooperation is encouraged in university research, it is seen as a very high status activity and the pinnacle of achievement for the individuals involved. They suggest, in contrast, that teaching and learning in higher education tends to be inward looking and concerned primarily with what goes on within institutions and national systems. This section therefore looks at the international activities of Geography departments, exploring policy (section 3.3381), international links (section 3.3382), mobility (section 3.3383), funding (section 3.3384) and international awareness (section 3.3385).

3.3381 International Policy

Having an international policy means that the department has a specific, documented plan of action to guide decisions and actions. In Europe, the European Commission had in 1999 asked higher education institutions to establish a Erasmus Policy Statement (EPS) for the period 2000-2005, that was assessed by the European Commission to award successful organisations with an Erasmus University Charter (EUC). Higher education institutions needed an approved EUC in order to participate in the SOCRATES/Erasmus programme and to apply to its National Agency for funding staff and student mobility programmes and to the European Commission for
curriculum development and intensive course activities. The Charter is a certificate which sets out the fundamental principles underlying the Erasmus activities to be respected by the university.

The EPS provided institutional information on the following:

- current international co-operation
- aims and priorities for 2004/2005 - 2006/2007 and
- ways that high quality in mobility and projects will be ensured.

It was thus anticipated that higher education departments would thus be encouraged to develop their own goals and policy statements. So, partners were asked about whether they had a European or international policy in place. Almost half of the institutions that responded did not have an international policy in place (Figure 3.315).

There is no policy, but we are trying to get contacts with other institutes and to exchange know how (Czech Republic)

My department has none. I personally want to establish a research project about citizenship education with European partners (Switzerland)

Unfortunately not. We have fallen back on our core task. Teaching Geography (Netherlands)

A few departments either planned to develop policy or said that it was implied in their activities but not written and 15% said that they followed institutional policy.

Yes there is an unstated implicit strategy: To seek more money from competitive research programs. (Cyprus)

Not declared, orientation on central and western Europe and North America (Czech Republic)

International strategy is at university level. The policy is oriented toward the development of exchange students and professors in Socrates programme, the development of conventions between universities on the basis of specific topics. International strategy for research depends on the policy of each research laboratory (France)

We have a special study programme for European Studies and Bilingual Teaching; the Geography department is part of this specialization. (Germany)

Within the wider University strategy (Erasmus/Socrates, Coimbra Group) as far as normal teaching activity; With developing countries, mainly in dry Africa, as far as our research group (Italy)

We are currently developing this and now have an International Programme Leader (UK)

Almost 30% of departments said that they had a policy in place (Figure 3.316).
The information provided on the departmental international policy provided an insight of the goals and priorities which had been established. Departmental international policy included statements on mobility, collaboration, research activities, getting funding and student recruitment.

Prepare more courses in English to facilitate ECTS and student mobility (Czech Republic)

We have 4 goals:
1. To exchange 25% of our students to study in other European countries or in the rest of the world
2. To make an easy access for incoming students to work in project work in English and to tutorials in English. To have some courses taught in English, also some special courses for guest students
3. To keep Danish as an academic language
4. To involve students in globalisation through projects (Denmark)

The university will become a member of the Coimbra Group (http://www.alys.be/coimbra-group/) (Estonia)

Faculty participate in Nordplus and Socrates -programmes. Research and study are important part of our education. The international education is a lively part of student exchange. Faculty cooperate not only with EU countries but also with the Baltic countries, Karelian republic and some African countries (Finland)

Mieux intégrer les relations internationales à la formation (France)

Strengthening international cooperation within the EU 6th Framework Programme. The cost Actions and the Socrates, Leonardo programmes. Furthermore strengthening international student and researcher exchange (Hungary)

International contacts are emphasised. The department has developed a one year programme for foreign students, with courses in
Geology and Geography, as a response for increased demand for student exchange (especially between European countries). Aim is to let Masters and PhD students take some courses abroad. (Iceland)

1. Diffusion of the topics on European Dimension in teaching Geography.
2. Development of cooperation with European universities
3. Development of research on European themes (Slovak Republic)

Yes, we are obliged to define our strategy of international cooperation. Until 2007 the department intends to enlarge substantively the international exchange of staff and students, as well as involvement in international research projects; at least one project at a time, led/coordinated by our department. Strong cooperation with EU universities as well as former Yugoslavia and the USA universities. (Slovenia)

Our Department has international strategy based on the university strategy. Department of Geography has strong interests for international cooperation with institutions that have a similar orientation and especially institutions/universities in the EU, eastern and south-eastern Europe. (Slovenia)

The faculty has a very clear international strategy with special emphasis in Latin America and in Europe, Our students and teachers go to Europe but also to Mexico, Nicaragua, El Salvador, Peru, Chile, Colombia, Argentina and Brazil. We receive every year, groups of teachers and Heads of schools from Latin America for intensive training and also PhD students. (Spain)

Yes to reinforce the relationships with the European Atlantic border, with Portugal and Latin America, especially with Brazil. (Spain)

Our policy is to stimulate exchange programmes and joint research (Netherlands)

Recruit more International students. Build on existing EU links (UK)

3.3382 Active international links

The number and range of active international links provided an interesting comparison (Figure 3.316). As anticipated, many Geography departments were generally well connected around the world. The nature of the subject implies regional studies and research in certain environments and locations. Very few departments had no links, though departmental connections with universities in between 1 and 5 countries were most common.

3.3383 Staff and student mobility

Higher education staff and student mobility in Europe is promoted by the Erasmus programme. This was inaugurated in 1995 and subsequently, though the number of mobile students supported increased, the emphasis of the programs shifted toward teaching staff exchange and curricular innovation. Funds were provided to individual institutions of higher education that were required to guarantee the quality of exchange through bilateral contracts with partner institutions. Geography department interests, expertise, activities and research are however likely to extend beyond Europe to cover all continents. Indeed many departments are likely to have a substantial 'global' dimension in their programmes.
The departmental staff and student mobility figures are indicated in Figures 3.317 and 3.318 respectively. From the survey, an average of more than 12 students per department (12.4) was exchanged and on average more than 3 staff (3.4) are mobile each year. However there were many marked differences, with some institutions exchanging large numbers of students and staff and others with limited activity or no exchanges at all.

**Figure 3.317** Student mobility in Geography departments

**Figure 3.318**: Staff mobility in Geography departments

One third of the departments mentioned that they had student and staff mobility outside Europe. The locations where exchanges beyond Europe took place were numerous and varied. They included Australia, Brazil, North America, China, Sudan, Burkina Faso and South Africa. Several universities commented on networks they belonged to and partnerships that had existed for some time. Specific examples included a co-tutored PhD programme, teacher training projects and specific research projects. Universities tended to have links to former colonial countries. For example, Spanish and Portuguese departments linked to South America.

The reasons for establishing international links are presented in Figure 3.319. The vast majority of them were established primarily for research and to enable the exchange of students and staff. Some links were also established for course and curriculum developments and fieldwork. Membership of large international networks was mentioned on 7 occasions, including the IGU and INLT.
3.3384 International funding

Although in most European countries for public institutions, the state remains the predominant source of funding for higher education, it is anticipated that there will be greater diversity in financing especially in terms of obtaining research and development project grants thereby transforming higher education by creating ‘enterprising universities’ (Clark, 1998). Non-state income thus becomes much more significant with the state itself also encouraging this shift.

Reichart and Tauch (Reichert & Tauch, 2003) recognise the lack of state financial support for Bologna reforms for nearly half of all the higher education institutions of Bologna signatory countries. They comment that by increasing the diversity of funding sources means that higher education will have greater independence from state intervention and different models of management, accountability and quality assurance will need to be put in place.

International funding is available from the European Commission to pilot, test and promote innovative solutions in education and it has supported and promoted the dissemination of good practise (Schumpeter, 1939). European policy suggests that there should be much greater emphasis on the types of cooperation and collaboration in learning including those brought about by communication and information technologies throughout Europe (NIACE, 2003).

The main funding tool that has promoted European interaction in education has been the Socrates programme, which contains an action specifically focused on higher education called Erasmus (European Commission, 2007b). Socrates/Erasmus promotes and supports student and staff exchanges, the development of joint study programmes, short intensive courses, pan-European thematic networks and other measures aiming at the development of a European dimension in higher education. Other tools exist to support interaction in the sectors of teacher training (Comenius), vocational training (Leonardo) adult (Grundtvig) and youth. Research, development
and other specific international opportunities exist to establish partnerships and programmes for collaboration.

The number of international funding streams accessed by departments is presented in Figure 3.320. About half of the departments (52%) had received funding for international activities. A few had successfully developed projects in several different funding areas, thus significantly diversifying their income. The sources of funding which were accessed were very varied (Figure 3.321). Most areas of EU funds were accessed. Socrates/Erasmus project funds were by far the most common. They were used for curriculum development, creating European Modules and for running short international courses called Intensive Programmes. Other funding included Minerva (for Open and Distance Learning innovations), Comenius (for teacher training) and Leonardo da Vinci funds (for work placements). Several institutions were involved in Tempus projects. Tempus funds allow international collaboration between EU and the partner countries in neighbouring states. This funding was particularly available to support higher education reform in transition countries seeking to join the EU. Geography research was supported through the Framework programmes and via specific European Commission Directorate General (DG) initiatives. Most Nordic institutions mentioned Nordplus funds. Other funding included Fulbright, Asia-Urbs, Life, INTERREG, and NATO.
3.3385 International Awareness

Internationalisation in a higher education context is said by Bartell (2003) to be an organisational adaptation to influences and actions from other nations. International scientific co-operation is a complex phenomenon, which were of great interest to academic teachers and researchers due to the great international expectations in an expanding Europe without borders. Kwok et al. (1994) suggest that there are three levels of internationalisation, awareness, understanding and expertise. In academic departments this involves creating an appreciation of international issues; developing knowledge and understanding of them and then international immersion. Being aware of the international opportunities on offer through policies, initiatives and organisations is a useful way of measuring ‘internationalisation’.

The awareness of academics to particular ‘international’ features is shown in Figure 3.322. Knowledge of Socrates, Bologna, ECTS and Framework 6 indicate an awareness of European Commission actions and activities. The IGU and EUROGEO are international, scientific networks in Geography and geographical education. The Geography Charter was produced by the IGU. Quality assurance is a system that was to be implemented through the Bologna Process and the Tuning Process relates to a large project by and for higher education institutions, supported by the European Commission in the framework of the Socrates programme (González et al., 2005).
3.34 Professional aspects
The balance of the different professional duties performed by academics depends on many factors, including the type of institution they are working at, their contract of employment and the even country they work in. In higher education, professionalisation can be described as the process of adapting to academic life. It includes a set of academic behaviours and accomplishments, like publishing papers, presenting work at conferences, applying for grants and obtaining membership of peer scientific organisations. Academics in higher education work as teachers, tutors, researchers, project leaders, administrators and managers. Senior academics are usually acknowledged experts in their specialist fields and undertake high level research and publications in these areas and work in supporting the disciplinary profession. They may also be asked to provide specialist services to others, including consulting, advising, reviewing, examining and mentoring.

Geography has a body of knowledge from which geographical identity is formulated. Professional identity comes from certain work practices in the discipline. Wigginton (1985) suggested that the best teachers are deeply involved in their profession as measured by, for example, their number of memberships of professional development organisations, as well as the number of different resources they used in their teaching.

Wenger (1998) identifies a number of characteristics when referring to identity in practice. He refers to, 'identity as a nexus of multimembership', believing that people are involved in many groups with different perspectives and that in order to manifest an identity there is a need to reconcile the different constituent groups to establish a community of practice. Gerber (2006) stressed the importance of valuing lifelong learning in a profession as he equated professional development in Geography with developing smart professional geographical educators.

This section examines some aspects of the academic profession within European higher education Geography. It presents professional concerns (section 3.341), membership of professional bodies (section 3.342), qualifications needed to teach in
higher education (section 3.343) the professional development that has been undertaken (section 3.342), professional development needs (section 3.345) and the employability of Geography graduates (section 3.346).

3.341 Professional academic concerns
The professional academic concerns of the surveyed academics are presented in Figure 3.323. Most of the concerns were strongly related to aspects of teaching.

Situation in Geography in Latvia is comparatively good, but in some cases geography and subjects related to it are taught by an old-fashioned manner (e.g. using scholastic methods etc.), without taking into account 'user needs' and 'state of the art'. Lack of modern text books in libraries leads to wide use of theoretical lectures instead of students self-dependant studies. We have some difficulties to introduce and realise new study courses (e.g. IT-based remote sensing image interpretation or IT-based environmental monitoring) which demand the use of new and very expensive technologies (hardware as well as software) due to lack of financial resources professional training strategies and provision including those (Latvia)

I am concerned about how to develop and teach Geography as an exciting subject. A major goal is to develop teaching methods in order to improve my own practice. (Norway)

After 30 years of teaching, I am getting to know how to "do it" but remain interested in trying new ideas. (UK)

But more significantly the detailed comments mostly referred to and reflected on the student learning approaches that academics were seeking to encourage.

We have recently introduced forms of more active learning for the students. Students are getting used to it quite slowly (Belgium)

Cooperative learning, Pedagogic constructivism; selection of contents of geographical education (Czech Republic)

How to learn the students to learn themselves for the future life. To handle a lot of information and bring it down to a clear overview. I find it Important that the students use an interdisciplinary approach to the world, rather than to give them a feeling of one discipline covers this and this. The real world and the problems out there are not divided in disciplines. So the question is does the world have not to be bound to an exact understanding of one or two disciplines? (Denmark)

I am interested in developing student centred methods and evaluation in Geography education. I am worried about the resources. (Finland)

A more communicative way of learning should be practiced; resources should be used more efficiently (Germany)

The challenge is active learning and training in critical thinking. (Iceland)

The teaching process should be much more based on students self learning and practical job, though in many cases it is impossible due to the lack of study resources, which often are not available for the students. (Lithuania)

Pedagogy of online learning must be effective. (UK)
In several of these statements and those below the need for more resources and ICT was stated. The number of students and shortages were also important issues.

We have not enough money for materials and equipment, even the money for salaries is too small nowadays and therefore we must do too much work in too many areas (Finland).

Lack of resources (time/money) for course development is a problem. Encouraging the emphasis on ICT development is an issue. At the university there are more rewards in salary and status for research/publication than for time spent on course development and teaching. (Iceland)

My own work is limited by the numbers with whom we have to deal. This means that development of interactive/innovative teaching/learning is hard to implement. It does, however, mean that there is frustration at times - the students feel they need more time/attention, while staff members feel exactly the same! (Ireland)

Practical classes and fieldwork are essential. Resources are too scarce, at all levels. WWW resources should be adequately integrated and framed for teaching purposes, in the classroom. There is a clear need for more reference books, journals, etc. (access). Lecturers involved in "heavy" research (time consuming), also because they share the costs of developing and promoting the Department, should have further institutional support. (Portugal)

We have too many students (the number of students increasing, while we have the same number of staff, with a limited quantity of equipment and size of classrooms, laboratories); lack of regular finances for the (GIS & cartography) laboratory equipment, lack of technical staff (e.g. for maintaining internet materials); all my lectures (and the accompanying exercises of my assistants) are supported by power point presentations and other types of delivering the information/stimulating students to learn, as well as with internet materials, links to other resources, etc. (Slovenia)

Lack of logistics and time available within the course framework (Sweden)

I would welcome an injection of funding that would allow financial support for the international fieldwork as this has proven to be one of the most successful modules taken by students. (UK)

Professional development was considered a critical issue.

Higher education lecturers should have (some) pedagogic training. (Portugal)
Subject issues and even subject survival were mentioned as important in some cases.

My concerns are related to my research areas, landscape ecology, environmental problems, sustainable development point of view, GIS, GPS, web using, student research activities (Czech Republic)

My concerns cover a range of linked topics, such as regional development of the border areas, sustainability development of the areas and euroregional dimension in teaching geography. (Slovak Republic)

We are worried about the balance between geographical and professional education (Netherlands)

My main profession concern remains the survival of my department. Numbers of applications are rising again and those students who decide to study geography here report that they receive a very good teaching and learning experience. Drop-out rates are very low and graduation statistics show a pleasing increase in the proportions achieving high grades. (UK)

3.342 Qualifications and professional associations

Nearly all participants were involved in professional bodies and associations (Table 3.341). Those that were not came from Austria, Cyprus and Lithuania. Half of those that responded only belonged to national bodies, but ten were members of the IGU (International Geographic Union), five were members of AAG (American Association of Geographers) and five were members of the Geographical Association (UK).
Table 3.310: Membership of professional associations (n=62)

<table>
<thead>
<tr>
<th>Type of association</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>national only</td>
<td>50</td>
</tr>
<tr>
<td>international as well</td>
<td>44</td>
</tr>
<tr>
<td>None</td>
<td>6</td>
</tr>
</tbody>
</table>

The professional qualifications required to teach in higher education are shown in Figure 3.324. A postgraduate qualification was required by most institutions, whereas a university postgraduate certificate (a teaching certificate) was not normally expected. In more than 10% of cases either there was no formal qualifications requirement or the institution did not specify a requirement.

Figure 3.324: Qualifications needed to teach in higher education

3.343 Professional development for staff

Professional development is on-going training that helps to keep current with change and practise in a profession, it often relates to acquiring specific skills. Personal development normally relates to the acquisition of generic skills. Ongoing professional development relates closely to the concept of lifelong learning (Healey, 2003).

Almost three-quarters of the respondents (73%) said they had access to some form of academic professional development. The main type of professional development
available to those with access is presented in Table 3.342, with more slightly more external than internal opportunities cited.

Table 3.311: The main type of professional development available

<table>
<thead>
<tr>
<th>Type of CPD</th>
<th>% replies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal – total</td>
<td>46</td>
</tr>
<tr>
<td>Internal - part of PhD</td>
<td>12</td>
</tr>
<tr>
<td>Internal - for new staff</td>
<td>3</td>
</tr>
<tr>
<td>External – total</td>
<td>54</td>
</tr>
<tr>
<td>External - related to a funded project</td>
<td>15</td>
</tr>
<tr>
<td>External - international</td>
<td>12</td>
</tr>
</tbody>
</table>

The survey of Geography academics also revealed the number of professional training (CPD) events that had been attended by them in the two years leading up to the survey and the types of professional support systems which they had access to (Table 3.312). The results showed that there had been little or no recent professional development undertaken by many of them.

Table 3.312: Number of professional development courses attended in previous 2 years (n=67)

<table>
<thead>
<tr>
<th>Number of CPD activities</th>
<th>replies</th>
<th>CPD needs</th>
<th>replies</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>38%</td>
<td>Internationalisation</td>
<td>43%</td>
</tr>
<tr>
<td>1</td>
<td>31%</td>
<td>Research</td>
<td>26%</td>
</tr>
<tr>
<td>2</td>
<td>14%</td>
<td>GIS</td>
<td>26%</td>
</tr>
<tr>
<td>3</td>
<td>8%</td>
<td>Pedagogy</td>
<td>20%</td>
</tr>
<tr>
<td>&gt;3</td>
<td>6%</td>
<td>IT</td>
<td>17%</td>
</tr>
<tr>
<td>CPD trainers</td>
<td>3%</td>
<td>Others</td>
<td>12%</td>
</tr>
</tbody>
</table>

A review of the training needs of survey participants is presented in Table 3.313. Internationalisation was said to be the most significant professional development need. Being able to participate in and undertake collaborative activities including research were high priorities.

*I wish to develop international contacts and projects in teaching area as well as research. The opening of the university to international collaboration must be a priority and I would like to be involved in this process.* (France)

This was also the case in the replies from the new member states and accession countries.

*We need support to attend on conferences, funding for research, IT equipment- because … support for higher education and scientific research is extremely restricted.* (Bulgaria)

*More support and greater involvement in EU projects and international programmes.* (Estonia)
3.344 Professional needs

The main professional needs are shown in Figure 3.341. The professional status of the subject and department were said to be important professional needs in many countries. Almost 20% of respondents commented that there were more rewards in salary terms and in status for research and publication, when compared with the status related to time spent on course developments and on teaching. Nevertheless, professional needs on pedagogical aspects remained relatively important to some academics as they recognised the need to provide student-centred approaches. Professional development to encourage active learning, critical thinking and communication were cited as needs with constructivist pedagogy and maintaining the inter-disciplinary subject nature of course developments mentioned as important. Innovation and change was implied in many replies and there were significant professional development needs in GIS and in IT (including elearning and distance education).

International aspects were stated as being important by more than 25% of respondents. These included the need to have:

- administrative guidance for EU-funded projects;
- advice and support on setting up exchanges,
- participation in international events,
- international collaboration on research initiatives
- professional development on seeking funding for research
- being involved in international projects
- finding partners to work with
- knowledge of European geographical education
- EU experience,
- sharing of course materials and curricula from other EU countries,
- higher involvement into international programmes,
- get involved with training geography teachers in other EU countries
- international multidisciplinary case studies,
- international co-operation in teaching,
- international professional development programmes,
- greater access to international colleagues.
- active network with international connections for the exchange of teaching and learning experiences, techniques, resources etc.

In one statement, the opening of the university to international activities was said to be the most important professional priority and the person concerned said that they would like to be involved in the process.

The use of technology in international activities was also a popular response to this question:

- ICT/web based geographical education - practical experience
- Distance learning
- publish in geography journal with impact factor
- I need a good computer with a fast Internet connection, necessary software and data
- IT equipment and resources, plus support, training and experience.
Other needs included more fieldwork opportunities, research funding, administrative support and English language courses.

**Figure 3.341:** The main professional needs of Geography academics (n=55)

![Bar chart showing the main needs of Geography academics](image)

<table>
<thead>
<tr>
<th>Need</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>International links</td>
<td>30%</td>
</tr>
<tr>
<td>Time</td>
<td>25%</td>
</tr>
<tr>
<td>IT training</td>
<td>15%</td>
</tr>
<tr>
<td>Research funds</td>
<td>10%</td>
</tr>
<tr>
<td>CPD</td>
<td>10%</td>
</tr>
<tr>
<td>Pedagogy support</td>
<td>5%</td>
</tr>
<tr>
<td>Publish</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>5%</td>
</tr>
</tbody>
</table>

3.345 Employability of graduates

In March 2000, the EU Heads of States and Governments agreed to make the EU the most competitive and dynamic knowledge-driven economy by 2010. At the Lisbon meeting, the European Council of Ministers sought to promote employment by enhancing the knowledge and skills of Europe's citizens through its Agenda 2000 (European Council, 2000). If this is to be achieved, then higher education institutions have a key role to play in developing appropriate strategies to equip young people for the world of work.

In its conclusions, the Amsterdam European Council stressed that the emphasis should be on a solid broad-based education and on the development of a set of skills (technological, social and organisational) which are conducive to innovation. In this respect it referred in particular to a range of transversal competencies - including the understanding of a diversity of cultures, competence in several languages, and the entrepreneurship which leads to the creation or development of businesses. Universities need to be in a position to offer their knowledge, tradition and the capacity for innovation in order to help prepare the future of Europe.

Employability has therefore become a very important component of European policy. At the Salamanca Convention of European Universities in March 2001 (EUA, 2001), the European universities declared that they recognised that their students need and
demand qualifications which they can use effectively for the purpose of their studies and careers all over Europe. The institutions and their networks and organisations acknowledged that they had to play a major role and responsibility in this regard. These new challenges call for greater knowledge and awareness of the issues involved, the contribution that Geography and geographers make to employability and an understanding of the state of employability of Geography graduates.

In 10 (out of 27) countries, it was reported that Geography graduates do not find it easy to get jobs. Academics from six countries said that Geography graduates mainly end up in the teaching profession, for example:

- Mostly in secondary education where each Geography teacher teaches in around 5 schools at any one time (in order to cover their hours). More recently some jobs have appeared in the private sector particularly in Environmental Appraisal firms. (Cyprus)
- Geography graduates can find a job especially teaching in schools. There are some other possibilities available, but it is more difficult to get these other jobs. (Finland)
- No, they don’t find work easily. The main employment sectors are teachers in secondary education (high schools). (Greece)
- Traditionally graduates became school teachers, but in decreasing number. New trends are not yet clear. (Italy)
- Yes, a large portion (probably the majority) goes on to teaching, but many are employed by Municipalities, Public Planning Institutions, Private Planning and Consulting Enterprises, GIS, Data Handling and Processing, etc. In the frame of my University, along with Social Communication and Sociology, Geography has (with a strong degree of certainty) one of the best employment rates among other social sciences (Anthropology, Languages, Philosophy, History). (Portugal)
- Majority of students become teachers in compulsory school (age 7 - 18). (Sweden)

In most countries geographers were highly employable, finding mainly ‘geographical’ jobs. Teaching was also mentioned as a common employer in 13 other countries and the range and variety of other jobs mentioned varied quite considerably.

- Cartographical institutes, Travel agencies, Governmental administration offices, School teacher (Austria)
- Graduates have some good possibilities, mainly as teachers, but some also in public administration, private enterprises (marketing, strategic departments, publishing etc.) (Czech Republic)
- Yes, they do find work relatively well, since their broad knowledge help them to adapt to the different workplaces in environmental agencies, self-government, planning and cartographical institutions. Especially for GIS specialists the job market’s supply exceeds demand. (Estonia)
- Geography graduates find jobs, and they seem to have a good position in the market. The main employment sectors are: consulting (sustainable planning) and ecological management, tourism, market research, public relations, town and regional planning, economic promotion...About 11% of Geography graduates don’t have a job. (Germany)
The main employment sector of graduates is in working in private companies dealing with GIS. (Greece)

Yes, mostly in planning, environmental assessment, mapping, GIS. (Iceland)

A recent survey of MA geography graduates showed that teaching, IT/GIS, research and administration/civil service appeared to be the most common areas. (Ireland)

There is no professional register for geographers; geography graduates can enter the tourist sector, provide consultancy for private enterprises and public institutions regarding site characteristics, maximising local resources, environmental impact evaluation (VIA), land planning, parks and natural resources management; they can work in the publishing sector, cartographic production and GIS; teaching opportunities, which used to be one of the main employment openings, are becoming fewer and fewer both in secondary and higher education. (Italy)

For the present there isn’t problem for them to find a job. The main employment sectors for Geographers are the following: Educational institutions – teachers of geography at schools and stuff members at state’s higher education institutions, Governmental institutions (e.g. the Ministry of Environment of the Republic of Latvia; the State Land Service of the Republic of Latvia; the Geological Survey of the Republic of Latvia etc.) and their structural units (e.g. the Cartography Board; different nature protected territories etc.) – cartography, remote sensing, GIS, environmental management, protection and monitoring, regional development and planning …, non-governmental institutions – geography and environmental protection orientated programmes and projects managing, organising of courses and different activities etc., private sector – mainly GIS and consulting, as well as stuff members at private higher education establishments (Latvia)

Yes, main sectors include services (tourism, consultancy ect) and state institutions (environmental, foreign policy) as well as secondary education. (Lithuania)

All graduates have been successfully employed within various sectors, including: Malta Environment and Planning Authority-Academia-Police Force-Teaching-Consultancy-Armed Forces of Malta-Malta Tourism Authority-Ministry for Tourism-National Statistics Office (Malta)

Most of our graduated students get jobs. At the departments 25th Anniversary in 2000 we asked 120 graduated students about their job situation. Just 4 had no job, and all of them had just graduated. (Norway)

Geographers normally don’t have trouble finding jobs. I believe the main employment sector is public service of various kinds. Some also work in education. In recent years the focus on GIS are making geographers popular in the GIS-business. (Norway)

Low overall unemployment, but many move far involuntarily to find jobs. Public administration (land use planning etc.) > teaching > research > private sector (Norway)
Relatively. Main jobs offered connected with Geography: teachers in secondary schools, environmental studies consultants, researchers, planning (Romania)

Yes, eventually they all find jobs - but they are not always connected with geography. Teaching in primary and secondary schools, tourism, environmental protection, regional planning, research institutions, public administration (local, national), regional developmental agencies, geoinformatic services, politics, non-governmental institutions. (Slovenia)

Traditionally, one of the main sectors for them has been Secondary schools teaching. Since 1995, the extensive and intensive use of GIS and IT, has opened new ways for the graduates and they are mainly employed in technical jobs, in local administration and in Research units. (Spain)

I don't know the percentage, but many of them find jobs in GIS enterprises. Out of education (teachers and professors), there are more than 3,000 geographers in Spain working in these fields as geographers. (Spain)

50% in education, the other 50% in ministries, education centres, ICT, nature conservation areas, exhibitions, television and information services (Netherlands)

Geography graduates find jobs in governmental institutions, secondary education and consultancy firms. (Netherlands)

Geography graduates are in demand for the skills of graphicity, numeracy, ICT and literacy that they obtain through their degree programmes. They are attracted to a wide range of careers. A recent survey by the RGS/IBG showed that in 1999 about 40% worked in management and administration, 25% went into further training including training for teaching and higher degrees, 11% went into the financial sector and 10% went into other professional posts including the media (UK)

Administration and management, teaching and lecturing, financial work, marketing all over 5% of geography destinations five years after graduation (UK)

In a few countries the employability situation of Geography graduates was becoming more difficult.

Until 2 years ago there was no unemployment among geographers. The last 2 years the situation has become more difficult (as in all sectors). Geographers are employed in government agencies, environmental consulting and firms specialising in GIS and production of digital road atlases. (Belgium)

In general, there are high unemployment rates, this causes problems for graduates to find jobs of any kind; geography is no exception currently (Poland)

In a number of cases the employability of graduates was said not to be very good.

Unemployment is high for graduates of Geography. They work in public administration, physical planning and education. In the private
sector some get jobs as consultants, but very few go to the financial sector. Many use their interdisciplinary skills - a consequence of 2 years of basic education and thereafter combining 2 subjects - to get into the labour marked. And for those who have geography combined with communication, geography might be used more as a general knowledge subject and communications as the actual skills. (Denmark)

Geography graduates mainly only find part-time work. They need to add additional skills to their Geography. Teaching is a less and less popular career chosen by Geography graduates. (France)

Normally it is not easy to find jobs. Mostly they can work in the national parks, local governments and environmental and hydrological institutions, but only in a very limited number, considering the great number of students and universities (Hungary).

It is not easy, but most of them can find jobs in their profession, in the following sectors: research institutes, universities and as teachers at secondary schools, furthermore at ministries, local authorities, consulting companies dealing with environmental protection and spatial organization (Hungary).

Usually jobs are not connected with Geography. If connected it is: school teachers or in travel agencies (Poland)

They mostly find jobs, but not necessarily connected with Geography (finding jobs might become a problem in future, if we won't make some changes). Main employment sectors are: primary and secondary schools, tourism, regional planning, state or regional administration, research work in suitable institutions, geoinformatic services, politics. (Slovenia)

To find a job as a geographer, it is not so easy! It depends on the specialization of the graduates. Possible employment sectors are: Education, Infrastructural planning (GIS-jobs), Cartography, Research, Development assistance (Switzerland)

3.35 Recent changes in higher education

3.351 Introduction

Carr and Johansson (1995) comment that change will involve both creativity and innovation. So, ideas need to be generated as a creative process and then transformed into useful applications that lead to change and progress. They suggest that an essential element for success is adaptability, to be able to manage at the speed of change.

As described in section 1, across Europe the management and organisation of higher education has been changing. Universities have been becoming increasingly more competitive. This in turn creates pressure to innovate and develop new initiatives, with staff encouraged to become increasingly creative and more resourceful. Some systems and institutions thus embrace change as innovators (Rogers, 1995), while others will be more resistant.

The impacts on innovative institutions are very significant. They would expect to benefit by developing a richer knowledge and resource base from which to operate. This in turn should enable them to enhance all aspects of their operations, including
research and their learning and teaching profile. However in some cases embracing such innovation may also be disruptive and so challenge their organisational effectiveness. Therefore gathering information on the changes that Geography departments are experiencing (section 3.351), the perceived threats (section 3.351) and departmental responses in the form of initiatives and actions (section 3.353) provides an interesting context.

3.352: Recent major changes in higher education

Figure 3.351 shows the recent major changes in European higher education identified by Geography departments. Subject changes were most

The latest impact is just under way. In all departments of Geography in Austria the syllables according to a directive of the Ministry of Education had to be completely restructured. The result showed a decline of Physical Geography and Cartography and a massive increase of lectures supporting Didactics and Economics - the position of Human Geography remained stable. Several general assemblies of the developers of the new syllables in order to design a common basis valid all over Austria have turned out to be useless. The various syllables are completely different from each other which makes it very difficult for students to change from one university to the other. (Austria)

The Globalisation process and the new geopolitical situation have renewed and increased the interest for some part of geography. Many students combine with development studies to focus more specific on international development organisation or just to use geography as a tool to learn more about the exotic world outside Europe. (Denmark)

The Association of Geographers have recently published the so called curriculum 2000+, which is a theoretical basis for developing new curricula and national standards in the future. As a result of PISA discussion Germany will also create national school standards for all subjects. (Germany)

In 1993 Geographer’s courses has been introduced besides Teacher’s Training. This has altered the structure of education. (Hungary)

Addition of tourism studies programme to the department has increased both number of students and staff. Environmental issues more on the agenda and it attracts students to geography. (Iceland)

B.A. in Geography was offered as a full subject within the Faculty of Arts in 1995/6. Previously the choice was between B.A. in Contemporary Mediterranean Studies (including geography, international relations and anthropology) or B.Ed in Geography (with limited input of pure geography). (Malta)

Modularisation of studies - increased competition (Norway)

In the case of my Department, the Graduation Thesis was abolished and all classes are theory - practical, as opposed to a division in Theory and Practical classes for most of the disciplines (3 classes per year on the first and second years). This has raised a lot of "issues", currently there is a significant "debate" going on about advantages and disadvantages. Most of the lecturers say they feel "uncomfortable" with some of the changes and feel / believe
Geography has lost a very important specificity (especially the 100 % practical classes). (Portugal)

Changes of training alternatives (specialisations). Distance learning courses establishment (Romania)

different concept of Geography studies, the environmental protection studies, introduction of postgraduate study at the Faculty of education. The imminent establishment of single-subject study of Geography, (Slovenia)

Figure 3.351: Recent major changes in higher education

Figure 3.352: Perceived threats to Geography in higher education

Changes as a result of Bologna were only considered to be significant by about one-quarter of the institutions. This implies that the impact had not yet filtered down to department level.

Up to now Austria's universities have not graduated Bachelors students but only Masters and Doctors. So every student that graduates as a teacher has at least got a Masters degree. In future also Bachelors will be possible but they will not be allowed to teach in school for higher secondary education. (Austria)

The introduction of a more active teaching and learning strategy. The future introduction of the Bologna agreements (Belgium)

1/ Implementation of three-stage study (bachelor, master, postgraduate, doctoral)

2/ Establishing of accreditation of universities; independent committee authorize teaching of the subject according to personal quality of the institution.

3/ Transition to credit system of study. (Czech Republic)

Introduction of bachelor (6 semesters) and master (4 semesters) educational systems at educational faculties preparing future geography (or "nature" subject) teachers for primary, secondary and high schools in 2002. Strongly aging personnel and technical
equipment - low wages for university teachers - less than national average, low investments into technical innovation. (Czech Republic)
Development of new organisation for higher education degrees according to the Bologna Process with 3 levels: Licence, Masters, PhD (LMD system in French: Licence, Master, Doctorate)- In French universities the system induces an increase in competition between geography departments in the affirmation of local specialities. This orientation has already started with the development of professional programmes provided by geography departments. The new reform will confirm this tendency. It is a major change in the way of thinking university training for a discipline which main existence was teaching without real necessity of competitiveness. (France)
The 2001 "3-5-8" reform opened windows of opportunity for geography, in its own degrees and within other topics’ degrees. Due to the autonomy of Universities, the answer is strongly connected with individual researchers / professors’ capability, prestige and entrepreneurship. (Italy)
The Department of Geography has worked hard to offer new and hopefully better courses through the university reform that will be implemented from autumn 2003. (Norway)
Major - Minor scheme was adopted in 2002-03, the University being the first in Portugal to follow the Bologna Convention principles - so far it is difficult to evaluate the results / consequences. (Portugal) approaching EU standards…(Slovenia)
Aspects external to the university were said to be important in one-third of the replies.

A new Geography Department was established in Athens in 1998 (the second in Greece). (Greece)

The process of international accreditation of academic and professional study programmes in higher education establishments in Latvia. (Latvia)

increasing demand for integrated / practically oriented curricula; establishing of the State Commission for quality assessment of education at the higher level; financial problems leading to general reduction of the most expensive forms of education (field practical classes, laboratory classes) (Poland)

New Technologies, computing, access to geographical data...Increasing importance of a Geographer within planning teams, be it Municipal, Local or regional level (Portugal)

Application of the new Higher Education Law (from April 2002) bring substantial changes in organisation, financing, evaluation and other areas of higher education institution activities. (Slovak Republic)

establishment of the third University in Slovenia, (Slovenia)

The birth of Geography like an independent major than History (Spain)

A new quality of education act has increase the time devoted to other subjects maintaining the same level of classes to geography. It has also set up the standard of minimum requirements at the national level in detriment to the regional or local emphasis. (Spain)

Recently problems in our environment such as avalanches, flooding, permafrost-problems, greenhouse-effect, ozone-problem proves the significance of geographical research (Switzerland)

Geography remains a popular subject at university but is becoming concentrated in fewer institutions. Numbers at some of the older universities have increased considerably in recent years and this expansion has come about at a time of falling applications. More offers are being made and more students are successful. The recently published White Paper in Higher Education does not deal specifically with subjects. It does provide opportunities for the subject, however, especially in terms of widening participation, links with business and two year foundation degrees. The promised rewards for excellence in learning and teaching as well as research are also welcome. (UK)

Increased competition from more vocational subjects (UK)

Some organisations had also commented on the lack of change taking place.

The perceived threats to higher education Geography are summarised in Figure 3.352. The status of Geography and its role was the threat identified by the largest number of replies, identified by half of the organisations.

The status of Geography is fragile both in the University of Cyprus (where is present only in the Department of Education) or in secondary education (where is present practically only in the lower secondary schools), without any substantial perspectives (Cyprus)
There is the possibility that the current rapid expansion in higher education is completed over a period of 10-15 years with no mention of Geography as a viable discipline worthy of attention either within multidisciplinary departments or in an independent department. (Cyprus)

fusing with other subjects (history, biology and chemistry) (Czech Republic)

Its importance and status of Geography in the public life is too low (Denmark)

In higher education, though the number of students is increasing, it does not mean Geography has a stable status (most of the incoming students have no even idea about what a geographer is). (Hungary)

G. is mainly considered as a descriptive and outdated discipline, unable to answer in a pertinent way to relevant issues. Some specific issues of G. (environment, regional planning, mapping, man-environment relations, etc.) have been successfully taken up by other disciplines researchers. This rather low status of the discipline as a whole necessitates the role of individual researchers in finding their own way; sometimes, as a vicious loop, so they are not perceived to be among the most prominent scientists of a Faculty/University, and this contributes even more in decreasing the discipline’s role and appeal (Italy).

It is still not recognized as a subject beyond school level, due to other professions taking the role of the geographer (especially architects). There is a lack of funding for geography, this is also a major stumbling block towards viability and activities organised under the umbrella of geography, even though the situation is slowly improving. (Malta)

identity problems (conflicting with other scientific disciplines, like nature conservation, ecology, biology, geology, economy, sociology) (Poland)

One of the main problems nowadays is to preserve geography as a subject at certain technical and vocational schools, where a decline of so called “human” subjects is taking place. According to this we must also mention that geography has not yet got the position it should have in our society which seems to connect it mainly with “classical” geography of “old days”. Geography is also losing its position in spatial planning, environmental protection and public administration. An important problem is also a low level of applicability and ‘geoinformatization’. (Slovenia)

In higher education: not acquiring status of a national science subject, perceived low level of applicability (Slovenia)

In combination with modern technologies such as GIS applications the role of geography becomes on the one hand more important. On the other hand it is more difficult for geography to define itself as a research discipline because of the subject’s interdisciplinary nature. (Switzerland)

In some responses this was related to number of applications and student numbers taking the subject and also the number of departments of Geography in higher education.
In higher education student numbers for our university are relatively low. There are a large number of drop outs after the first year (Belgium)

There is the ageing of population and reduction of the number of potential students in the near future; the lack of economic resources to invest in ICT and human resources. (Portugal)

The continuous decline of applicants, both in big universities and in small ones (Spain)

There is a worrying trend towards the reduction in the number of departments offering the subject at higher education level. It remains a high status subject, however, mainly because of the quality of its graduates, for its high quality research and teaching and especially for the innovatory teaching methods being introduced. It leads the way in many respects in terms of the use of ICT in learning and teaching and its professional development organisations such as the Geography Learning and Teaching Support Network are second to none. One worrying aspect in the teaching to the subject is the decline in the amount of field work being carried out. Partly this is due to increased cost; it is also due to changes in the law regarding health and safety. (UK)

The status was also closely related to the image of Geography.

Not very good image of the discipline among the prospective students - they are not sure when kind of career the geography education can offer (Bulgaria)

The main problem is that people don't know what a geographer can do, what problems they can solve, how a geographer can participate in decision making on environmental problems, etc. In other words, what a geographer can do that other scientists cannot do it. People think that a geographer knows very well the names of all the countries, their capitals, the names of rivers, mountains and lakes and where they are located. And nothing else. Thus, the main threats that geography faces is the lack of public awareness. The subject will decline if geographers don't show to the people that every day life is dominated by geographically oriented decisions, that geography is every day life. This can be achieved if geographers and teachers bridge the gap with simple geography activities. (Greece)

Comparing with other sciences Geography has no public perspective nor acceptance by other fields of science (i.e. the Hungarian geologists, the botanists etc. do not accept the results and work of geographers). (Hungary)

Lack of professional perspectives; lack of funding, which causes a very poor offering of laboratories, fieldwork, etc. to students, thus making the subject mainly theoretic and limiting the variety of teaching and learning strategies (Italy)

In higher education for the time being there are no clear threats for Geography, except that there remains no understanding of the nature of geography as an integral science. The position of geography (and geographers) in state education and science regulation structures is weak and as the educational and scientific system depends very
much on state funding, there constantly exist some threats.
(Lithuania)

The lack of funding and resources was also considered important, including time and human resources.

Lack of money for equipment (Czech Republic)
Even if the number of applicants in Geography seems to be increasing, the Geography departments have to face decreasing manpower in teaching in higher education. In many Geography departments, the number of professors is decreasing - sometimes in order to realize more jobs at assistant level. A very big threat consists in the closure of several departments in order to concentrate the Geography departments at a smaller number of Universities. This process has already begun or will come in the next years. (Germany)
Lack of research funding, lack of PhD graduates (Iceland)
Lack of funds and general poor condition of Polish higher education system (Poland)

There were also subject threats where the status of Geography was said to be under threat from other, often new, disciplines or through competition and mergers.

Geography is being replaced by many other disciplines in the case of traditional geographical inertia (Czech Republic)
There are some voices underlining that Geography is not necessary in higher education. Therefore lecturers must fight all the time for resources. (Finland)
Being replaced by other similar subjects (e.g. Environmental Education) (Greece)
In higher education there are new subjects being introduced into the system, therefore there is more choice, possibly fewer students selecting geography (Ireland)
The threats that Geography faces as a subject are many, but the most important is that it should not be merged with other subjects. It is important to legitimise the subject. The geographers in Norway are perhaps too modest? (Norway)
Too connected to social sciences, which are being erroneously judged as not practical enough by the reigning and dominant technocracy. Not evolving peacefully to a more quantitative nature, which some consider as a setback in making it a more applicable science (in Planning, management, etc.). Still considered by many (too many?) as a "specialization in generality". (Portugal)
The main threats that Geography faces in higher education are in relation to: competition developed with other subjects like urbanism, GIS, territorial engineering, economy, that also analyse territory and space. (Portugal)
A threat is the increasing number of studies (such as tourist, environmental studies or international relations, European Studies, Cultural Studies) that although related to geography the refuse to call their classes, geography and in some cases some of those courses are taught by non-geographers (Spain)
There are new careers and courses (Environmental Studies, Tourist) (Spain)

The professional status of Geography and the threats to it in a professional context were also mentioned.

Geography is not able to profile their candidates as professionals for a variety of jobs. New education possibilities in man–nature and environment relations are coming up. Old education takes more focus on place and space as well as on economy and environment. (Denmark)

Geography in higher education in Spain is facing threats from the increasing professional orientation of the curricula emphasizing new technologies such as GIS or Remote Sensing and downgrading general concepts and approaches in human and physical geography. In some cases some of these very specialized technical courses are taught by non-geographers. (Spain)

Finally a response from Spain suggested a response to any perceived threats.

The creation of the Colegio de Geógrafos has been the best way to face threats, because now, law protects our professional work. No threats in higher education, nothing different than other majors. (Spain)

3.353 Initiatives

The Geography departments surveyed (n=63) identified more than 180 initiatives that they were involved in. These were then classified (Figure 3.53) under the headings, curriculum development (including assessment, course development, programme creation, course design), research (projects, applications, completion, conferences, publishing), Bologna (curriculum structures, credit transfer (ECTS), employability, europeanisation, standards, enterprise), teaching (teaching activities and delivering courses), making links (collaboration with other organisations, networks and projects) and elearning (courses, resource development, projects).
3.354 Creative Developments

Departments were asked to comment on the types of creative developments they were involved with and that were taking place in their departments that they ought to share with others in the network (Figure 3.354). These were mainly classified primarily as being related to teaching and research. Teaching and learning initiatives included:

i) continuing professional development (CPD)
   - Postgraduate courses for senior teachers (Austria)
   - Fieldwork - developing Malta as a fieldwork centre for undergraduate programmes (Malta)
   - New professional developments - the department is involved in the development of new postgraduate courses in order that graduate students have better chances in their professional lives, looking at the labour market demand. (Spain)
   - Forschung und Entwicklung project – an action research program for teachers (Switzerland)

ii) curriculum initiatives
   - Geo-informatics, this is a curriculum development together with the departments of computer science, statistics and the faculty of forestry (Finland)
   - Science education courses and curriculum that take into account student perceptions and are based on constructivist teaching (Greece)
To introduce European Dimension in the curriculum, the knowledge of Europe as a way to introduce the world around us, and to introduce European citizenship. (Spain)

To use the real world in geography classes, a course on "Our contemporary world", where the contents are organised every year depending on current affairs and real world situations, such as oil resources (Iraq crisis), forest fires in Australia, the flooding of rivers in central Europe (Spain)

A key skills curriculum (UK)

iii) other aspects of teaching including methods, projects and researching about teaching

IT aided learning developments: a teacher in tourism studies has been innovative in using IT in course development. She won a prize for the creative use of IT in teaching, after being nominated by students. (Iceland)

A project on how to use ICT (GIS) in geography teaching (Norway)

On-line GIS courses, e-learning (Poland)

Geography week - during one week the department develops a set of activities (exhibitions, small lectures) in order to promote geography in basic and secondary schools. (Poland)

Billingualer Unterricht - Bilingual geography courses (Switzerland)

Educeth –an education server with teaching materials http://www.educeth.ch (Switzerland)

Project work - from day 1, the students will learn to work in groups and formulate problems of academic or/public interest and to learn how to find information and how to study journals and books parallel with the project work, as input to general knowledge and as input to the project report. (Denmark)

PGP is a pedagogical resource for successful study, named pedogeographical package (PGP, by Ana Vovk Korže). The PGP facilitates field and laboratory soil analysis with their interpretation. This is a new step into the integral landscape investigation from the viewpoint of soils. It consists of five procedures each of them has a formulary, which the user copies and completes in the field. (Slovenia)

Some specific geographical research projects mentioned were:

A research project to compare two neighbouring communities at the Czech-German boundary under similar natural conditions (Czech Republic)

Minority-project, homepage: http://minority.homac.at (Finland)

Desertlinks LADAMER, a project linking science to society, involving stakeholders; workshops; surveys; participation (Portugal)

3.4 Role of HERODOT

Survey participants were asked to reflect on the perceived likely role of the HERODOT network at the initiation of the main project lifecycle. The rank order of
perceived network roles is listed in Table 3.41 and the results are presented visually in Figure 3.41. International exchanges and links and the promotion of the subject were items that more than two-thirds of departments perceived as being an essential role of the network. Working on a Geographical charter, providing an information focus and case studies and examples were considered to be essential for the network to do by more than half the survey participants. There were few negative items proposed (what the network should not do).

**Table 3.41: Rank order of perceived importance of role the HERODOT network should perform**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Role of HERODOT</th>
</tr>
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<tbody>
<tr>
<td>1 (most)</td>
<td>Support and promote student and staff exchange opportunities</td>
</tr>
<tr>
<td>2</td>
<td>Develop links between higher education departments, including trans-European projects</td>
</tr>
<tr>
<td>3</td>
<td>Promote Geography at European and international level</td>
</tr>
<tr>
<td>4</td>
<td>Develop a European Charter for Geography</td>
</tr>
<tr>
<td>5</td>
<td>Provide an Information Service for Geographers in higher education</td>
</tr>
<tr>
<td>6</td>
<td>Develop an online handbook of case studies of Geography good practice in higher education</td>
</tr>
<tr>
<td>7</td>
<td>Develop joint European courses at Masters and PhD level</td>
</tr>
<tr>
<td>8</td>
<td>Establish a catalogue of opportunities for Geographers in higher education</td>
</tr>
<tr>
<td>9</td>
<td>Monitor and advise on policy leading to changes in curriculum</td>
</tr>
<tr>
<td>10</td>
<td>Undertake research in order to inform public education organisations for policy developments</td>
</tr>
<tr>
<td>11</td>
<td>Establish Quality Professional Development for Geographers</td>
</tr>
<tr>
<td>12 (least)</td>
<td>Development of training course for new Geographers in higher education</td>
</tr>
</tbody>
</table>

**Figure 3.41: Evaluating the role of the network.**
4. Summary and conclusions

The ‘State of Geography in Europe” report focuses on the place and status of geography in higher education, aspects of teaching and learning Geography, internationalisation and the European dimension, as well as innovation and change. Presentation of the findings also shows some professional aspects and professional development, including areas of concern. These results demonstrate some cultural and national differences however, there are a number of common elements which need to be addressed with a range of challenges for European geographical education.

4.1 The State of Geography

Geography appears to have mainly remained a popular element in the curriculum because it is a relevant, stimulating and interesting subject which deals with real-world issues. A significant factor in explaining geography's continuing strength in many countries is the subject has remained in the school curriculum. In higher education, Geography has undergone many subject-related developments, whereas its role in schools has remained largely stable. The importance and relevance of regional, national and international professional organisations should not be understated. In some countries, considerable attention was being paid, by the profession, to improving the quality of academic Geography and initial and in-service teacher education.

Kent (1999) suggests that across the world, Geography is often still perceived in an very outdated and completely inaccurate fashion. The strength of the geographic discipline is important as it provides valuable insights which need to be effectively transmitted to the public. This is, in general, not being done very effectively. Public awareness of Geography is very low. Academics from many participating institutions were concerned about the limited, outdated and false views of geography held by decision makers and employers in particular. The future image of Geography and its threatened status is thus of great concern.

Some of the challenges therefore would appear to be to:
  a) improve the visibility of Geography in Europe
  b) communicate an accurate, modern awareness of the subject to key target groups
  c) promote the quality of geography education
  d) work together more effectively
  e) share experiences and expertise through a network of excellence
  f) encourage teaching excellence to be rewarded, in order that it can be perceived as being as important as research
  g) consider, research and promote exciting Geography
  h) increase connections between school and university Geography (Kent, 1997; Kent & Smith, 1997).
  i) ensure the training of teachers as Geography professionals

4.2 Internationalisation

International aspects are of great importance to geographers in higher education. The huge transformation that is taking place under European enlargement and the Bologna process has meant that Geography has come under threat in some
countries while strengthening its position in others. What is clear is that Geography can potentially make a considerable core contribution to establishing active European citizens who are able to participate effectively in European ideals. A main challenge now is how to promote Geography to that its potential can be realised. Studying Geography in Europe must remain relevant by providing an understanding of issues in Europe and the world. Academics therefore want and need to engage internationally.

The right for young people to have a geographical education is promoted through the International Charter on Geographical Education. This is an internationally accepted, but not widely used document. An awareness campaign to ensure that people are more widely aware of its existence should be undertaken.

4.3 Teaching (and research)

As stated above, Geography is an ideal discipline for modern curriculum reform to enhance the education of future European citizens. It promotes critical thinking and encourages educational principles to be challenged through open-ended, enquiry-based and project-based learning (Howard, 2002). The development of relevant educational activities should be prioritised so that the expansion of pedagogical boundaries can bring the meaningful development of active learning into the curriculum. Pedagogy needs to focus on constructive learning approaches, through for example Problem-Based Learning (PBL) and geographical enquiry. These approaches should challenge the students to become active members of an interacting group. They should review and interpret geographical concepts by examining real-world issues so that they can collectively build up their knowledge and understanding through exploration, discovery, reflection and critical thought.

The system of higher education in Europe is undergoing a tremendous transformation as a result of the Bologna Process (Swan, 2004). New courses and programmes are being developed at undergraduate and postgraduate level which will mean that academics are likely to be required to work in many new ways. Student learning is now expected to become the central focus in course restructuring of content, layout and structure (Stubbings & Brine, 2004).

The survey shows a wide range of teaching methods were used, however teaching resources were consistently an issue. Geographic Information Systems (GIS) and ICT were not as prevalent as might have been expected given the eEurope initiative. Surprisingly GIS was hardly used at all in teacher training. Curricula and methods of learning and teaching varied greatly between departments. Some were more dependent on lectures and traditional approaches, others emphasised a greater variety of methods with student-centred learning approaches (Chalkley, 1996).

In Europe, apart from a few notable exceptions, there would appear to be relatively few professional development opportunities available for academic Geographers in higher education to learn for example about new technologies and innovative teaching strategies (Donert, 2003). Despite the obvious needs, professional development also remains relatively unattractive to many academics working in European higher education. Research priorities continue to dominate over teaching in terms of status, and significantly in funding.

This research was a launching pad for the consideration of quality aspects of learning and teaching Geography. It is important that tutors examine the possible ways that student-centred approaches can be incorporated in the learning-teaching process,
followed by a review of the methods and strategies which would have the greatest impact on the development of key spatial skills which will further enhance learning. Professional development that will encourage reformist teaching, with a resultant shift away from behaviourist approaches to learning, will have to be implemented to achieve this.

To establish a European Higher Education Area, the quality of teaching and learning needs be taken as seriously by academics as is the quality of their research (Gibbs, 1995). To achieve this Healey (1997) suggests that we need to place more emphasis on how the quality of student learning can be improved. Gibbs (1998) suggested that if we want to improve teaching we have to invest not in more or better research but in mechanisms which will support and disseminate research. He cited eleven points which would help quality improvements in learning and teaching in higher education to take place, these were:

- train staff effectively
- employ only well training staff
- establish a promotions and reward system
- fund learning and teaching facilities and equipment
- fund teaching development work
- fund ‘good’ teaching
- publish evaluations and outcomes of funded courses
- establish peer review of overall teaching
- generate a scholarly approach to build on previous work
- share and discuss and
- emphasise openness to encourage public discussion and debate.

Jenkins (1999) argues that we need to consider both research and teaching. He suggests that if we really value research, then we need to look at the relationships research has with teaching the subject. In many cases, teaching and research were perhaps not strongly connected. There were difficulties in getting teaching valued in the same way as research, especially in cases where discipline-based research is a priority for funding, status and promotion.

The Carnegie Foundation for the Advancement of Teaching comments that the most important considerations are how academic staff spends their time and in particular how they are rewarded (Glassick, Huber, & Maeroff, 1997). This leads us to identify four separate but overlapping areas of scholarship, discovery research, integration (including writing text books), service (with practical applications of knowledge and teaching (Hutchings & Shulman, 1999).

The ways that national and institutional systems respect, fund and review teaching and research were an influence how members of staff see their role. This in turn probably determines the extent to which they effectively link student learning with discipline-based research. The onus is on Geography itself to ensure that the quantity and quality of geographical education is maintained and enhanced (Jenkins, 2000). We need to prioritise this by professionalising the profession of teaching in higher education at an international scale. Disciplinary bodies and professional associations have a key role to play in monitoring, researching and sharing good practice. They should also be providing an international framework that can be used as guidance for individuals, course teams and departments.

The establishment of agreed subject benchmarks of academic performance could provides the potential to create measures of progress and performance and thus to
inform quality assurance. Measurements of the progress towards a European Higher Education Area could then be demonstrated by identifying changes in curricula that were the result of these agreed European benchmarks.

Surprisingly, at the time of this survey, there was little research concerning the implementation of such benchmarks. Any documents that exist tend to be uneven in quantity and quality. In the US and UK, benchmarks (or standards) have been quite well received and other initiatives such as the GIS ‘Body of Knowledge’ were also having some impact. Though there has been no research study or review of the overall assessment of its impact on courses and the impact on Geography educators remains unsure. A review of publications yields similar conclusions.

Establishing the right sort of learning and teaching culture under Bologna will become indispensable. Mechanisms that might establish this include an analysis of the ways in which geographers can exploit innovative methods in teaching in order to better prepare students for the professional world where activities will increasingly be influenced by information technology, key skills and lifelong learning.

4.4 ICT, Innovation and change

Innovation and change in teaching and learning in higher education is associated with the use of computers and elearning in teaching and learning (John et al., 2004). This research has shown that, taken collectively, the geographers involved tend to embrace innovation and change.

Policies to establish eEurope imply that the coming years will result in significant innovation and change in education (Commission of the European Communities, 2002). If this is the case, then education higher education institutions are likely to need to focus on becoming communities of learning where face-to-face teaching might no longer be the dominant delivery method and the teaching role will probably shift from knowledge transference to guiding students (Oliveira, 2002). Cooper (2000) proposes that teacher-centred institutes will have to shift their focus to future education in order to cope with the potential of ICT.

Though many departments offered courses in or related to ICT in Geography; few at the time used either distance learning or elearning to deliver courses for students. Computing and GIS practical courses were widely taught, usually reflecting the need to provide basic ICT skills for students and introductory mapping skills, rather than specific spatial computing. Often more specialised skills would then be provided in more advanced courses (Coppock, 1974). The growth in interest in GIS has resulted in a resurgence in higher education Geography in the United States over the last few years (Bednarz, 2002). Whether this will happen in European countries will depend on whether geographers have the opportunity, resources and professional development. The diffusion of GIS in teaching and research into other disciplines is already accelerating.

Geography should be taught in an effective, modern and challenging way. Professional bodies need to play positive and constructive roles in improving the quality of Geography education. Promotion and awareness events should celebrate and advertise the role and quality of Geography in education.

Demands and expectations on higher education are changing radically. European higher education which was normally considered to be a symbol of tradition and permanency has been touched by dynamic changes. However, despite the Bologna
process, there is no standard model for Geography in higher education. However the creation of benchmarks for Geography in Europe would benefit all concerned, especially if they could be practically used as a guide or framework for course and curriculum development as well as the identification of suitable learning and teaching strategies. These benchmarks would represent an attempt through which the curriculum can be better understood.

4.5 Final conclusions
In 1999 Ashley Kent (1999) appealed to geographers from around the world to improve their understanding of the role and status of Geography to ensure an entitlement to geographical education, as promoted by the IGU Charter (IGU-CGE, 1992). In 2002 the HERODOT network was established to provide an international organisation that would encourage collaboration, provide professional development and support for higher education geographers in Europe. So as a result of this research undertaken a large number of actions to meet the needs of its membership have already been implemented.

This review of the state of Geography has achieved the first step in providing knowledge vital to our understanding of the achievements and contribution of the discipline and the perceptions held by geographers. The network will hopefully allow participants to share and carry out strategies for promoting an up-to-date and accurate knowledge, understanding and thus perception of the study of Geography in helping us understand the contribution of Geography as envisaged by Kent (2000).

There is no international assessment process or professional body that provides a health check or picture of the achievements of Geography in Geography. Trends towards the autonomous management of higher education, limits the opportunities for measurement of performance in the quality of geography education.

This report of the “State of Geography in Higher Education” provides a sound basis for understanding some of the strengths, weaknesses, threats and needs of international geographical education. The results illustrated in this report are potentially valuable as they highlight the places for action by the geographical subject community. The research has shown that for Geography, there is considerable potential for action, particularly at the levels of exchange and international collaboration, professional support and development, sharing of experiences and expertise, curriculum innovation and implementation. The state of geographical education therefore offers a barometer on the health of the discipline of geography in higher education in different countries.
References


