EDUCATION
TRAINING
Y O U T H

ERASMUS Subject Evaluations

Summary Reports of the Evaluation Conferences by Subject Area

Volume I

Agriculture
Archaeology
Biology
Chemistry
Languages
Pharmacy
Physics
Teacher training
Tourism and Leisure
Women's studies

EUROPEAN
COMMISSION

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Foreword

There is scarcely a higher education institution in Europe that has not heard of the Erasmus programme, and since 1987 many students, and teaching staff have benefited from the mobility made possible through the inter-university cooperation programmes (ICPs) established under its auspices. As a Community programme, Erasmus is unique in its insistence on direct, mass involvement of the citizen (students and academic staff) and the fact that it is open to all higher education institutions and all disciplines without discrimination. Erasmus does not target subjects or regions, but rather has aimed at establishing a critical mass of individuals (some 3/4 million) who have had a direct experience of studying and living in another Member State (or, since 1992/3, in one of the then EFTA countries).

The programme has generated numerous reports and studies at national and community level (such as the well-known student evaluations undertaken by the Gesamthochschule Kassel-Universität) which examine the effects of mobility on the individual student, teacher or university. But what about the actual teaching - what effect has Erasmus had on the curriculum and how it's taught? Does mobility, as well as other Erasmus-style cooperation activities, such as joint curriculum development, have any long term impact on the subject area? What problems have been encountered in transnational cooperation in education - and do they still exist or have they been overcome? Can areas be identified where transnational cooperation is most needed and/or most effective? After nearly ten years of Erasmus how has higher education changed and are there new challenges to be addressed across Europe? How, in fact, is the starting base for the Socrates programme different from that of Erasmus? It is to begin to answer these questions that a series of Erasmus subject evaluations were set up during the transition phase from Erasmus to Socrates.

From 1994, the Commission has invited higher education institutions - principally their Erasmus coordinators - to submit proposals for Erasmus subject evaluations. These evaluations, have had two general aims: to recognise the achievements of the past and to identify opportunities for the future. Although reflecting the particularities of each discipline, the evaluation had the same basic structure in common, viz.:

- Scientific Committee: the evaluation was steered by a committee of academics from the discipline concerned, each participating country having one representative (Liechtenstein excepted). Switzerland, though not eligible to participate in Socrates, was involved in Erasmus and therefore often present as observer. The contracting university or association acted as Chair.
- National reports: the main work of Committee members was to prepare a report on the state of the discipline in their country. The format for such national reports varied according to the discipline concerned, and was normally worked out at the first meeting of the Committee. Common elements included a description of the curriculum, its structure, content, limitations, dependencies (such as approvals required by professional bodies, Ministries, or employer groups), strong points to be developed and areas of concern to be remedied. The common approach was intended to facilitate cross-country comparison, and thereby to enable the Committee to identify shared viewpoints and especially issues that could benefit from university cooperation, whether at national or European level. As the quality of cooperation, especially for student mobility, is heavily dependent on the requirement for mutual recognition of the study period undertaken abroad, compatibility of curricula and ways of fostering mutual understanding were frequently the key topics for discussion.
- ERASMUS report: the Chair's responsibility, as contractor for the evaluation, was to organise an evaluation of the ICPs under ERASMUS. Most evaluations hired researchers for some months to examine the documentation held in the ERASMUS Bureau and prepare an analysis of activity. The practice varied considerably according to the discipline concerned (especially its size and level of involvement in the different parts of the programme), but most reports gave both a quantitative and qualitative description of the partnerships and the issues they revealed.

- Evaluation conference: the work of the Committee culminated in an evaluation conference open to all interested parties - mostly teaching staff participants in ERASMUS ICPs in the field, but often also (depending on the discipline) including representatives from the professional world, regional/national authorities, employers, or researchers. Typically around 200 people attended, and the core activities included presentation of the national and ERASMUS reports and associated discussion groups.

- Synthesis report: after the conference, the final work of the Chair was to prepare a synthesis report on the conclusions of the conference. This report, though subject-specific (as indeed was all the work of the Committee), had a common aim with the reports of the other committees in that it was intended to reveal the agenda for future cooperation in the discipline concerned, principally through identifying issues that could be tackled at institutional, national or European levels.

The final outcome should therefore be a summary of what a discipline thinks of itself - what's important, and for whom, and what needs to be done in order to develop expertise and competence across Europe.

The synthesis reports for these evaluation conferences held in 1994-1996 are the subject of this two-volume publication. Although many disciplines will have discussed similar issues, the way forward necessarily depends on leadership and imagination on the part of the academics in a particular field, and the conclusions of the conferences must be tried and tested by peers. It is not within the remit of the Commission or of the Socrates programme to rank one report over another. If the process stimulated by the Commission has initiated, continued or re-directed a debate on the European dimension in teaching a particular discipline, we can be pleased that it has fulfilled its purpose. But it is for the academic world to decide what use to make of it. The Socrates programme even provides the means to take up this challenge through its Action 1D of Erasmus 'University cooperation projects on subjects of mutual interest', better known as Thematic Network Projects.

The Socrates/Erasmus Thematic Network Projects are an entirely new activity. To a certain extent, the subject evaluations can be seen as a valuable precursor to the concept of a European-wide academic forum, by discipline or other linking theme, which can investigate the state of European cooperation in the field, test out new ideas for teaching, argue the future directions for the curriculum, and relate academia to the needs of the outside world, all by means of specific projects. The results of these projects should reach beyond the relatively narrow scope of the ICP by being disseminated throughout a network more representative of European academia and other interests in the field concerned.

It is critically important that analyses of the sort found here are not left to gather dust, but rather used as a starting point for further activity. Much work has been put in to assembling European-wide data and establishing common ground between widely differing educational traditions in order to expand and improve cooperation and the benefits derived from it. What is the next step?

First, examples of good practice in university cooperation, or interesting ideas that are ready to be put into practice, can be incorporated by any institution into the activities it proposes to carry out within the framework of the Socrates/Erasmus Institutional Contract[1]. An example would be the introduction of ECTS, which has emerged as a useful tool to facilitate academic recognition of periods of study, and which is encouraged in the programme through funding for the preparation of the necessary academic and administrative support (e.g. information packages). Of course, responses to the evaluation conferences may also be implemented without reference to European programmes, such as through changes to staff recruitment policy or the development of research.

Second, for more innovative approaches, where details of practice have yet to be worked out, a Thematic Network Project may be more appropriate. Issues which need further analysis, further information gathering, or a test phase to see if an approach really works in the different systems in Europe, could all become the topic of a Project. An example would be where a subject evaluation has identified the common issue of multilingual teaching as important to all participating countries, but has not yet reached a conclusion as to how this might be achieved or structured. A working group could be set up to find relevant current examples, define parameters at European level, investigate impacts on diploma structures, identify relevant research, seek appropriate funding mechanisms (e.g. teaching staff mobility, open and distance learning) etc., and arrive finally at recommendations for implementation as a test.

Finally, for subject areas which have not been targets of an Erasmus evaluation, the Thematic Network Projects - which are open to all higher education institutions or academic associations - may provide a means for doing such evaluations. As academic associations can be particularly helpful structures for bringing disparate groups into contact, and generally supporting information flow between different institutions, there is, additionally, provision under the Erasmus Complementary Measures for the establishment of new the European associations, which may then be a strong basis for starting Thematic Network Projects may arise.

Under Socrates/Erasmus, therefore, the Institutional Contract activities and the Thematic Network Projects are complementary. Together they underpin the cooperative initiatives taken by the academic world to improve the quality of European higher education teaching, and provide a mechanism for a continuous dynamic of practice and evaluation, innovation and implementation. The subject evaluation reports give some pointers to where such initiatives might be focused in the early years of Socrates.

[1] *Activities within the institutional contract are: organisation of student mobility (plus associated student grants), short term teaching staff assignments and medium term Erasmus teaching fellowships, preparatory visits, ECTS (the European Credit Transfer System), curriculum development projects at initial/ intermediate and advanced levels, European modules and integrated language courses.*

I

Studies in Pharmacy in Europe

Synthesis Report, 31 July1995

P. Bourlioux
European Association of the Faculties of Pharmacy

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Introduction

There is great diversity in the organisation of health care systems in Europe, each country having set up a **system appropriate to its culture**. Pharmacy, and more precisely the training of pharmacists in Europe, is of course linked to these systems which vary, sometimes greatly, from one country to another. It is therefore of vital importance, **in order to further the freedom of movement of pharmacists within Europe, to establish what these differences are, to evaluate them and to set up systems which facilitate student exchanges and allow for the mutual recognition of qualifications among the European states.**

The distinguishing feature of the pharmaceutical domaine in Europe **is the existence of an official structure** which was set up by the European Commission under the name of **Advisory Committee for Pharmaceutical Education**. This committee (see Table 1) is made up of 3 official members and 3 deputies for each country in the Community (representing the universities, the profession, the department of health) and was set up in **an attempt to homogenise the training of pharmacists in Europe** in accordance with **Directives 85/432/EEC and 85/433/EEC** issued by the European Commission.

Furthermore **in 1992, the Association of European Pharmacy Faculties was founded with the aim of giving the training of pharmacists a European dimension**; one of its objectives being **to promote exchanges among teaching staff and students**, thus adding to their training a European dimension in the widest sense of the word.

In order to have a global picture of the training of pharmacists throughout Europe it was necessary to **carry out a survey** in order:

- to establish how far the Advisory Committee had got with their tasks in each of the twelve Member States of the European Community;
- to establish what the situation was in other European countries;
- to assess the existing European cooperation programmes (Erasmus);
- to draw up a list of needs and to publish the conclusions and recommendations for the use of students and teachers of pharmacy. This was indeed carried out in Berlin at the second meeting of the Association of European Pharmacy Faculties, the proceedings of which have been published and can be obtained from the office of The Association of European Faculties of Pharmacy.

Table n° 1
Commission of the European Communities
Advisory Committee for Pharmaceutical Education (A.C.P.E.)

Composition:

- 2 representatives from the competent health authorities (1 full member and 1 deputy);
- 2 representatives of the academic staff;
- 2 experts from the pharmaceutical profession for each country.

Mission:

To apply the directives 85/432/EEC and 85/433/EEC to play an active part in ensuring that the training of pharmacists be of a comparably high level throughout the Community.

Tasks:

- **Training periods in community pharmacy practice:**
  - Importance in the curriculum;
  - content.
- **The different pharmaceutical specialisations:**
  - Hospital pharmacy : recommended training = 3-year course (adopted by the ACPE on 26/2/90);
  - Industrial pharmacy : not for the time being;
  - Community pharmacy : a report is to be finalised by the Advisory Committee in March 1996.
  - Biology : in preparation.

Training institutions in Europe

Today Europe must be considered **from different angles** since there are:

- The European Community (EC) (12+3);
- The former EFTA countries (2);
- The satellites of the former USSR;
- The countries of the CEI (former states of the USSR).

This study focused on the 12 counties of the European Community, the 5 EFTA countries and 10 Eastern European countries (see Table 2).

Table n° 2
Concerned countries

E. C.	Belgium	Greece	Netherlands
	Denmark	Ireland	Portugal
	France	Italy	Spain
	Germany	Luxembourg	United Kingdom
EFTA	Austria	Norway	Switzerland
	Finland	Sweden	
Eastern Europe	Bulgaria	Iceland	Slovak Rep.
	Czech Rep.	Lithuania	Slovenia
	Estonia	Poland	
	Hungary	Romania	

In these countries, with the exception of Luxemburg, pharmacy subjects are taught in one or more pharmacy faculties. **The profession is subject to national regulations and, for those who have chosen to join the EC, to European Directives 85/432 and 85/433**.

In the **27 countries** studied, there are approximately **146 faculties, schools or institutes of pharmacy**. This approximation stems from the fact that in certain countries, in particular Spain and Romania, several private pharmacy faculties have just been opened. These 146 institutions serve a population of about **450 million inhabitants**, i.e. an average of 1 faculty per 3 million inhabitants – and have an estimated **student population of 100, 000**, delivering roughly **11, 000 diplomas per year** (see Table 3).

Finally, if the location of the pharmacy faculties in the EC is known, the same cannot always be said of the 15 other counties studied (see Table 4).

Table n° 3
Number of faculties, schools or institutes of pharmacy

(E.C.)	
Belgium	7
Denmark	1
France	24
Germany	18 + 5
Greece	3
Ireland	2
Italy	24
Luxembourg	0
Portugal	3
Spain	10
The Netherlands	2
United Kingdom	16

Number of faculties, schools or institutes of pharmacy

(Other countries)	
Austria	3
Bulgaria	1
Czech Rep.	2
Estonia	1
Finland	3
Hungary	2
Iceland	1
Lithuania	1
Norway	1
Poland	9
Romania	6
Slovak Rep.	1
Slovenia	1
Sweden	1
Switzerland	5
Total (Other countries) =	**37**
European Community (12) =	**109**
Total countries =	**27**
Total population =	**450 m**
Total faculties =	**146**

Table n° 4
Localisation of the faculties, schools or institutes of pharmacy

Austria :	• Vienna • Graz • Innsbruck	**Norway :**	• Oslo
Bulgaria :	• Sofia	**Poland :**	• Krakow • Warszawa • Gdansk • Lublin • Wroclaw • Lodz • Poznan • Katowice • Bialystok
Czech Rep. :	• Hradec. Kralove • Brno	**Romania :**	• Bucarest • Constanta • Iasi • Clujnapoca • Targu Mures • Timusoara
Estonia :	• Tartu	**Slovenia :**	• Ljubljana
Finland :	• Helsinki • Kuopio • Turku	**Slovak Rep. :**	• Bratislava
Hungary :	• Budapest • Szeged	**Sweden :**	• Uppsala
Iceland :	• Reykjavik	**Switzerland :**	• Geneve • Bâle • Berne • Lausanne • Zurich
Lithuania :	• Kaunas		

The Present Situation

1. Pharmaceutical studies in Europe:

1.1. In the 12 countries of the European Community

Professor Ahlgrimm, President of the Advisory Committee for the training of pharmacists, presented his report on the current situation.

1.1.1. In view of the great diversity among the various Member States, the Committee decided to carry out investigations into the following:

- Entry requirements for students wishing to study pharmacy;
- total duration of the studies;
- organization of the studies (examinations at intermediate stages);
- number of contact hours (yet to be defined);
- subjects taught.

These investigations were all the more important since the directives only mention 3 points with regard to the organisation of pharmacy studies, namely:

- A minimum of 5 years of study;
- the fields of study in which the student must acquire knowledge;
- the minimum curriculum which must be taught (see Table 5).

1.1.2. In order to obtain comparable results from the study, the Committee found it necessary to clearly define a certain number of terms:

- **Contact hour** must be understood as meaning hours that the student spends within the university as part of his/her training, **in direct contact with a teacher** during a lecture, tutorial or practical work. This term does not include preparation or self study at home.
- **Training period** must be understood as being the time which corresponds to an apprenticeship during which the student works mainly in **an independent manner and is productive**. This work may involve analysis in a chemical laboratory; the formulation of a drug; an examination under a microscope; data processing; etc.

Table n° 5
Minimal list of teaching

- Plant and animal biology
- Physics
- General and inorganic chemistry
- Organic chemistry
- Analytical chemistry
- Pharmaceutical chemistry, including analysis of medicinal products
- General and applied biochemistry (medical)
- Anatomy and physiology; medical terminology
- Microbiology
- Pharmacology and pharmacotherapy
- Pharmaceutical technology
- Toxicology
- Pharmacognosy
- Legislation and where appropriate, professional ethics

The Committee also found it necessary to divide the subjects into 6 subject categories (see Table 6) differentiating between, on the one hand, those 14 subjects mentioned in the European directives and on the other hand, the other subjects taught.

1.1.3. The results of this inquiry clearly show that in the present situation pharmaceutical studies cannot really be considered as being comparable.

In fact:

- **Student admissions for pharmaceutical studies are limited** in 7 of the EC countries;
- in most Member States of the EC there are **intermediate examinations** during the course of pharmaceutical studies;
- in other countries, such as Germany, **there is a distinction between basic studies which are assessed by an examination and pharmaceutical studies themselves**;
- in 2 Member States, Denmark and the Netherlands, **the students have to carry out major scientific work** during the course of their studies. This is also true of Austria, a new Member State;
- in most Member States students may choose **semi elective subjects thus determining their own study profile**.

Table n° 6

Courses of EEC directive	Further subjects
I. Chemistry	
General and inorganic chemistry	Medical physico-chemistry
Organic chemistry	Pharma-copeial analysis
Analytical chemistry	
Pharmaceutical chemistry including analysis of medicinal products	
II. Physics/mathematics/computing/statistics	
Physics	Mathematics/Computing/Statistics
III. Biology/biochemistry/pharmacognosy	
General and applied biochemistry (medical)	Phytochemistry
Plant and animal biology	
Microbiology/Pharmacognosy	
IV. Pharmaceutics/technology	
Pharmaceutical technology	Finished medicinal products
V. Medicine/pharmacology / toxicology	
Anatomy, physiology, medical terminology	Pathology/Histology/Nutrition
Pharmacology / pharmacotherapy	Hematology/Immunology/Parasitology/Hygienics
Toxicology	Emergency therapy
VI. Law/social aspects of pharmacy	
Legislation/professional ethics	Philosophy/ Economics
	Management/History of pharmacy
	Public health

1.1.4. With regard to teaching the conclusions of the inquiry are as follows (see Table 7):

- **The length of pharmaceutical studies varies considerably** between Member States ranging between 1, 893 teaching hours in Britain and 4, 227 in Portugal;
- **The proportion of practical studies or tutorials varies greatly** between the countries ranging from 28% (Scotland) to 62% (Germany);
- **Elective courses only exist in a few member states with, yet again, considerable variations**. In Ireland elective courses represent 7% of all courses, in Spain and Britain 13% and 14% respectively and 22% in Denmark and France;
- **Course content also varies considerably and it is impossible to make comparisons between courses which are so different even though they sometimes bear the same name**. This is why the Advisory Committee felt that it was necessary to divide the 14 subjects quoted in the directive into 6 subject categories (see Table 6). **If the average number of teaching hours per subject category is expressed as a percentage of the total number of teaching hours**, some interesting observations are made; it is clear that the subject which takes the greatest number of **hours** during pharmacy studies is **chemistry**. However, whereas **in Germany, Belgium and Italy the studies have a chemical basis, in Greece, Ireland and Denmark courses have a technological basis while in France and the Netherlands, a strong biological basis.** Table 8 is of interest in that it can serve as guidelines for the calculation of credits and facilitate diploma recognition in the context of **ECTS**;
- All these data clearly show that **each country has its own specificity** as far as the teaching of pharmaceutical sciences is concerned and hopefully they will remain so. However, **the training schemes must be coordinated** and this entails **making proposals and recommendations**.

1. 1. 5. Advisory Committee recommendations (Professor Glombitza's report).

- Pharmacy students must receive a **general scientific base which must represent at least 50% of their academic training. At least 35% of the course must be made up of practical laboratory work**.
- During this phase students must receive a **sound and well balanced foundation in chemistry, physics and biology** which provide the basis for their main pharmaceutical studies, i.e.:
  - The functioning of biological systems;
  - pharmaceutical chemistry;
  - development and manufacturing of drugs;
  - use and action of medicines, drugs and other products;
  - pharmacy practice in hospital, industry, university or community pharmacy including an introduction to aspects of pharmacy related to the social sciences.

Table n° 7 *(Glombitza)*
Training courses in pharmacy in the EEC-countries

Country	Years of Pharmaceutical education in total	Total number of university education (hours)	Total number of contact hours identical and compulsory for every student	Practical courses in total %	Contact hours semi-optional subjects	Scientific work in hours	In-service professional training in months
Belgium	5	3080	3080	52	-	-	6
Denmark	5	3576	2256	44	660	660	6
France/Lux.	6	2610	2030	40	580	-	20 or 26
Germany	5	3250	3250	62	-	-	12
Greece	5	3185 or 2327	2925	43	260 or 312	-	12
Ireland	5	2141	2101	37	40	-	12
Italy	5	2630	2630	31	-	-	6
The Netherlands	6	4670	3420	29	250	1000	6
Portugal	5.5	4257 or 4272	4227	46	30-45	-	6
Spain	5	3305	2825	30	480	-	6
Britain/ Scotland	4 or 5	2163	1893	28	270	-	12

Table n° 8
Average volume of the subject areas

Country	I Chemical subjects	II Physical/ Mathematical subjects	III Biological/ Biochemical subjects	IV Pharmaceutics/ Technology	V Basic medical and pharmaco-logical subjects	VI Law and social aspects of pharmacy
Belgium	43 (17/26)	10 (6/4)	24 (13/11)	8 (3/5)	14 (8/6)	1 (1/0)
Denmark	36 (15/20)	6 (6/0)	13 (8/5)	19 (5/14)	13 (11/2)	14 (9/5)
France	26 (14/12)	9 (5/4)	25 (15/10)	6 (4/2)	30 (20/10)	4 (3/1)
Germany	46 (13/33)	4 (2/2)	21 (8/13)	15 (6/9)	11 (7/4)	2 (2/0)
Greece	28 (16/12)	6 (4/2)	20 (12/9)	22 (12/10)	22 (12/9)	1 (1/0)
Ireland	25 (14/11)	10 (7/3)	22 (13/9)	20 (11/9)	19 (16/3)	4 (4/0)
Italy	40 (24/16)	8 (7/1)	16 (12/4)	8 (5/3)	26 (19/7)	3 (2, 7/0, 3)
The Netherlands	32	8	12	12	29	7
Portugal	26 (14/12)	11 (8/3)	27 (13/14)	15 (6/9)	15 (8/7)	5 (4/1)
Spain	27 (19/8)	13 (9/4)	32 (23/9)	10 (6/4)	14 (10/4)	5 (4/1)
United Kingdom (Scotland)	32 (23/9)	3 (3/0)	19 (14/5)	13 (9/4)	16 (12/4)	16 (11/5)
Average	33 (17/16)	8 (6/2)	21 (13/9)	13 (7/7)	19 (12/6)	6 (4/1)

% in brackets: (theory/practical courses)
All data are rounded up or rounded down.

- **At least 1/3 of the teaching should be centred on substances which are directly linked to the study of the mechanism, the use and the manufacture of drugs.** It will be necessary to maintain **a balance between the other subjects taught.**
- It seems necessary to set up **intermediate examinations** during the course of study, when and where they are lacking.
- A **sufficiently wide choice of elective courses** should be offered.
- It would be **a useful experience for each student to carry out a project over a 3-6 month period.**
- **Finally, the complete course should include at least 3, 000 hours of teaching.**

1.2. In 15 other European countries

The remarks made by the Advisory Committee with regard to the 12 EC countries also apply to the 15 other countries in the study.

1.2.1. In fact, the results of the inquiry led by the European Association of Pharmacy Faculties show that there are also great variations from one country to another.

So, the figures speak for themselves (see Table 9), equally well for the total number of teaching hours as for the percentage of practical or elective courses.

Overall the same observations and recommendations (see 1.1.5) can be made with one extra element, that of **the teaching of modern languages, which is mostly compulsory although sometimes optional in most of these countries.** If it is true that the teaching of basic foreign languages is not the objective of pharmaceutical studies, **such courses are complementary,** enabling students, professionally, to develop a European dimension.

1.3. General conclusions

Pharmaceutical studies **differ considerably from one country to another but what emerges clearly is that each country has its own training methods which give it a certain identity.** It is also clear that **pharmacists, even if practices differ, carry out their job equally skillfully and conscientiously. This would suggest that the different ways of training pharmacists are equally efficient.**

If each country were to keep its identity and its originality and each professor their specific skills, it is necessary to **limit harmonisation by not imposing a commom teaching programme on each of the different countries**. It would seem far more reasonable for there to be **concertation as to teaching objectives thus leaving freedom as to the teaching methods. What are teaching objectives? To define this, the following question should be asked for each discipline:**

What knowledge should a pharmacy student have in this discipline when he or she obtains his or her diploma and is on the verge of entering his or her professional life?

This is the topic of an ongoing study carried out by the Association of European Pharmacy Faculties with regard to 5 disciplines:

– **Pharmaceutical technology (Pr. Hincal)**
– **Analytical chemistry (Pr. Castillo García)**
– **Microbiology (Pr. Bourlioux)**
– **Pathology (Pr. Ando)**
– **Chemical therapeutics (Pr. Tortorella)**

If tangible results, meeting with general approval, are obtained from the current study it will be enlarged to cover other disciplines.

2. Student exchanges and the Erasmus programme

2.1. The current situation

The number of ICPs in pharmacy has risen steadily and for the academic year 1994/95 Brussels has approved 22 Erasmus ICPs and a further 3 interdisciplinary ICPs which included Pharmacy (See table 10).

These ICP concern the following 3 activities:

- Student mobility programmes (the most popular);
- teaching staff mobility programmes;
- intensive programmes.

There is no joint development of new curricula programmes.

The fields of study concerned are wide ranging, including pharmaceutical technology, medicinal chemistry, pharmacology, clinical pharmacy and biology. Each ICP can include one or more disciplines.

Theoretically the number of students involved **for 1994/95 is 526** but in reality the number is 50% lower (260). These ICPs **concern 15 countries (11 Member States and 4 EFTA countries) and include 99 universities** taking part in one or more programmes.

2.2. Subjects and participants

Any pharmaceutical discipline which is taught can be the subject of an ICP; consequently any faculty, school or institute of pharmacy is a potential participant. It must be pointed out that not all such establishments are involved in ICPs although they may take part in one or several programmes and that certain subjects are more popular than others.

Table n° 9
Training courses in 15 other European countries

Country	Years of Education	Total number of contact hours for every student	Practical course %	Contact hours semi-optional subjects	Scientific work in hours	Total hours	Professional training (months)
Austria	4 1/2	3345	40	120 hours	210 hours	3505	12
Bulgaria	5	3627	64	136 days	-	4371	10
Czech Rep.	5	2953	65	336 hours	476 hours	3830	6
Estonia	5	4915	62	-	-	4977	12
Finland	3/5***	3550	59	yes but variable	480 hours	4089	6
Hungary	5	3960	54	3 x 12 weeks	30 weeks	5664	6
Iceland	5	3320	44	-	10 weeks	3914	9
Lithuania	5	3561	75	324 hours	-	3960	7
Norway	5	not known	not known	-	-	-	-
Poland	5	4590	69	yes but variable	375 hours	5034	12
Romania	5	4512	64	256 hours	-	4832	9
Slovenia	5*	3300	42	120 hours	3 months	3912	1
Slovak Rep.	5	2975	67	135 hours	-	3177	6
Sweden	5**	6364	not known	355 hours	-	6719	1 (?)
Switzerland	5	4136	42	-	-	4178	12

* New programme started in 1991;
** New programme started in 1992;
*** Bachellor's degree/Master's degree (starting in 1994).

Fig. 1 shows that **17 out of 25 ICPs are coordinated by southern European countries** and there are considerable differences at this level. Spain coordinates 6 ICPs, Germany 1 and Britain none. It is possible to deduce that **southern European countries more often take the initiative to create ICPs.**

If one takes into account **the number of disciplines** coordinated it is yet again the **southern countries which are foremost, coordinating 51 of the 68 disciplines** covered by the ICPs (different ICPs may include the same discipline).

If we turn to the **distribution of establishments taking part**, we can observe a different pattern of results (see fig. 2) with Britain for example, which does not coordinate a single ICP, but is cited 18 times.

If we now consider the **disciplines** and divide them into 3 categories: **basic sciences – pharmaceutical sciences – pharmaceutical practice** – we obtain the results shown on Table 11.

Pharmaceutical practice has the lowest score. This may be due to the fact that **these practices are very different from one country to another** and accounts for the fact that only one ICP has, as an objective, student mobility during the hospital or community pharmacy training period.

Furthermore, 10 disciplines are included in more than 2 ICPs and 9 out of 22 include pharmaceutical chemistry among the disciplines taught (figs. 3 and 4).

Finally one can say that the more classical, drug oriented subjects are more often coordinated by southern countries, whereas patient oriented subjects such as clinical pharmacy, therapeutics etc. tend to be more often coordinated by northern countries.

2.3. Student mobility

21 out of 22 ICPs offer students the possibility of carrying out part of their 2nd or 3rd academic cycle in another country of the Community.

Table n° 10
Numbers of approved ICPs in pharmacy by strand In 1988-1994

Year	ICP	Student mobility	Teaching Staff mobility	Curriculum Development	Intensive Programmes
1988	4	4	0	0	0
1989	9	8	0	0	1
1990	8	8	1	0	0
1991	15	15	1	0	0
1992	16	16	1	0	0
1993	22	22	2	0	0
1994	22	21	4	0	2

Fig. 1 : Number of ICPs and countries coordinating them

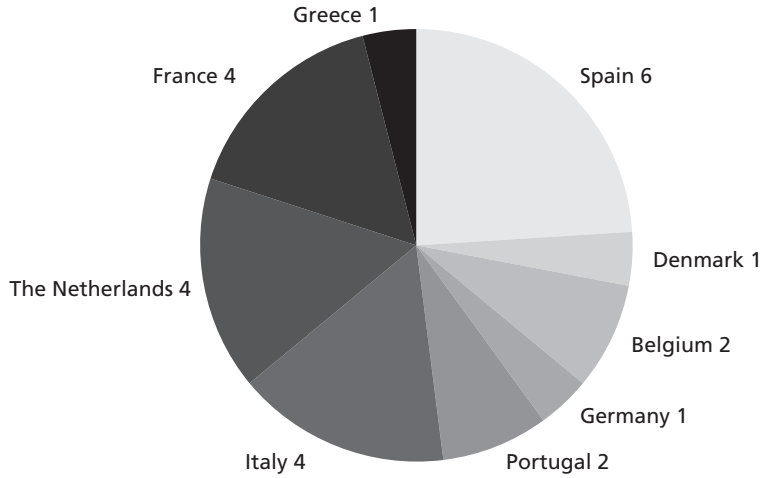


Fig. 2 : Number of participating institutions

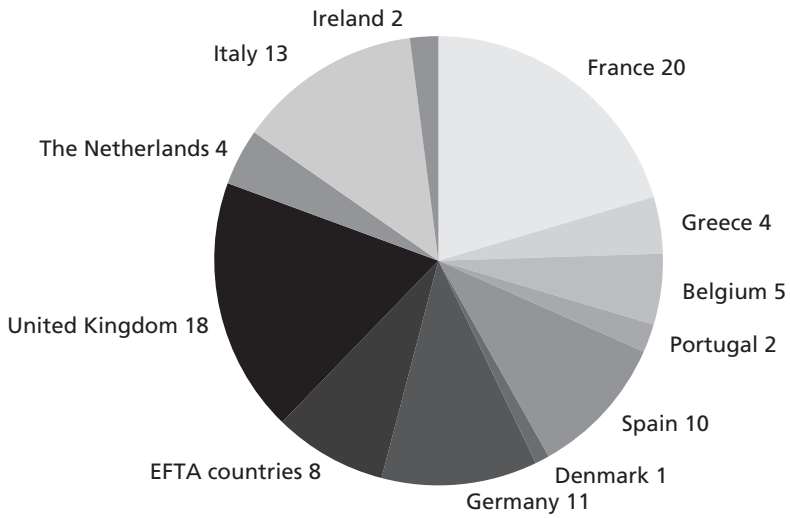


Tableau n° 11
Topics taught in the ICPs

Basic sciences	Applied pharmaceutical sciences		Pharmaceutical practice
Biochemistry (1)	Galenic Pharmacy (5)	Clinical Pharmacy (1)	Community Pharmacy (2)
Microbiology (2)	Pharmacognosy (3)	Drug Information & Advice (1)	Hospital Pharmacy (2)
Pharmaceutical Biology (3)	Phytotherapy/ Industrial Pharmacy (2)	Pharmacotherapy (1)	
Food Technology (1)	Phytopharmacy (1)	Pharmaco Epidemology (1)	
Molecular Pharmacology (1)	Biopharmacy (7)	Sanitary Education (1)	
	Pharmaceutical Technology (4)	Pharmaco Vigilance (1)	
	Drug Development (1)	Pharmaceutical Chemistry (9)	
	Drugs (4)		
	Pharmacokinetics (3)		
	Pharmacology (5)		
	Toxicology (1)		

( ) Number of ICPs including those topics.

Postgraduate (3ème cycle) **students** taking part in exchanges are generally involved in **training periods in hospital and community pharmacy or in research laboratories.**

Students taking part in exchanges during their 2nd academic cycle follow courses with the students of the host university. Apparently there has been no problem to date as to the validation of examinations with the student's home university.

2.4. Mobility of academic staff

Of the 22 ICPs, 4 included a teaching staff mobility programme. This system is rarely set up alone and is generally coupled with student mobility.

2.5. Intensive programme

2 of the 22 ICP's have developed a cumulative teaching programme which includes both student and teacher mobility. These multinational programmes focus on themes not usually dealt with by all the participating countries (N. B. :programmes based solely on research or international conferences are not considered by Erasmus).

Analysis of the current situation (only 2 ICPs) shows the causes:

- **General reasons: lack of information; lack of time; language difficulties;**
- **more specific reasons: diversity of disciplines in the pharmaceutical field; heterogenousness of study programmes; heterogenousness of career orientations; efforts needed to set up cooperations of this type between a limited number of countries.**

2.6. Summary

Student exchange schemes in pharmacy studies do indeed exist and they are running smoothly, but to improve the situation the following recommendations should be followed:

2.6.1. Promote schemes which favour joint development of new curricula and encourage in these programmes the development of good professional practice.

2.6.2. Encourage teacher mobility in order for them to study the trends which are developing in other European countries and the structures which enable them to develop pan-European programmes in new disciplines such as biotechnology or gene-therapy.

2.6.3. Encourage the setting up of intensive programmes in new fields of study.

2.6.4. The diversity of degree courses should not be an obstacle to student mobility. Therefore it is advisable to develop the European Credit Transfer System (ECTS) which facilitates the mutual recognition of diplomas and consequently student mobility at all levels.

Fig. 3
Distribution of topics

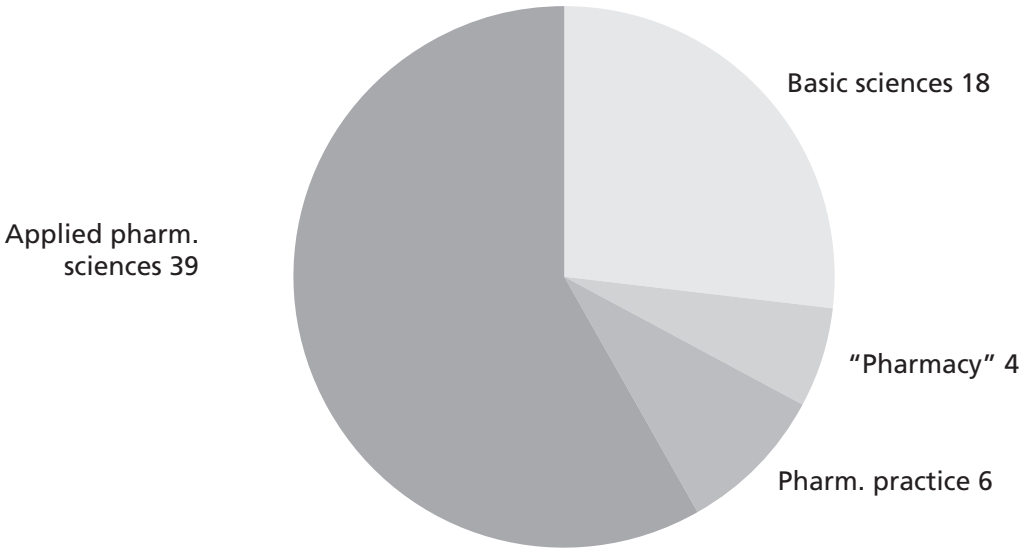
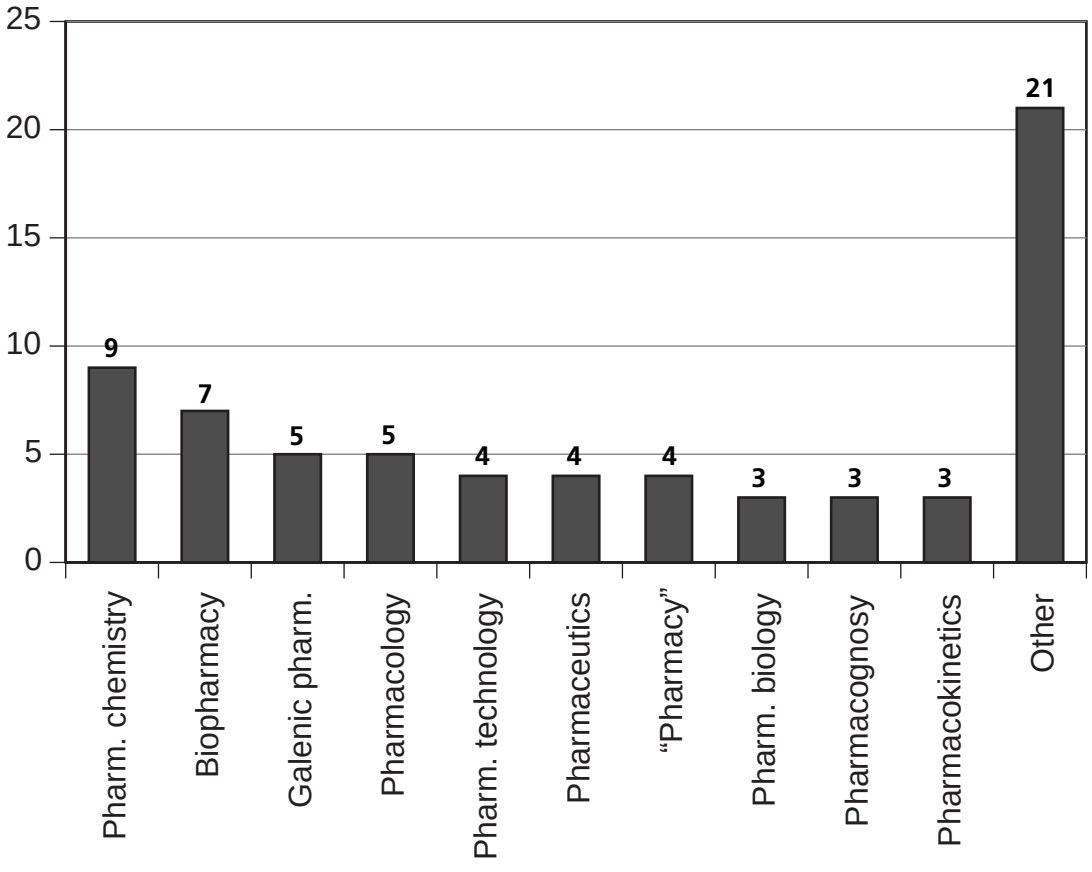


Fig. 4
Most popular topics



2. 6. 5. Programmes which only concern a few students should not be discouraged.

2. 6. 6. Encourage programmes centred on health economics.

2. 6. 7. Encourage programmes based on professional practice.

2. 6. 8. Certain cultural aspects of pharmacy (e. g. history of pharmacy) should not be neglected.

2. 6. 9. Prepare the ground for student exchanges by first giving them a sound knowledge of the European language of their host country so that their mobility can be truly beneficial.

The European Credit Transfer System

When the European Credit Transfer System (ECTS) is agreed upon, it will guarantee academic recognition of periods of study which the student has completed abroad. However it must be known that it does not allow for automatic recognition and that it does not require, as a prerequisite, the harmonisation of the studies and the curricula.

Any decision concerning recognition of diplomas and credits in the disciplines studied are taken by the teaching establishments concerned.

The pilot scheme set up in the fields of chemistry and history of medicine, is **based on the attribution of 60 credits per academic year which are only awarded to students when they have successfully passed their examinations.**

With regard to pharmacy few institutions have set up this system (Iceland has a scheme based on 30 credits per year).

An institution wanting to take part in this scheme could, as a guideline, consult the table giving the average number of teaching hours for each discipline in the 12 countries of the EEC (see Table 8) and agree on a scheme such as the one shown in Table 12.

In order to promote the setting up of such a system in faculties, schools and institutes of pharmacy **the European Association of Pharmacy Faculties requested that ICP coordinators and their colleagues reflect on how to implement this system** (Berlin and Budapest meetings).

The directives on how to set up ECTS are available from the European Commission or the Socrates and Youth Office (tel.: (+32)2-233.01.11; Fax: (+32)2-233.01.50). Information is also available on Internet (http://www.cec.lu/en/comm/dg22/socrates.html).

Table n° 12
Proposition for ECTS in pharmacy

- based on a minimal teaching (14 disciplines) divided into 6 groups
- based on 5 years / 300 points (60 credits/year)

-	chemistry	33%	(from 32 to 38)	95
-	physics	8%	(from 6 to 9)	25
-	biology/biochemistry	21%	(from 19 to 23)	60
-	pharmaceutical technology	13%	(from 12 to 16)	40
-	pharmacology	19%	(from 16 to 20)	60
-	law/social aspects of pharmacy	6%	(from 3 to 6)	20

The Socrates Programme

1. Objectives

Some of the **specific objectives of the Socrates Programme** are:

1. **to develop a European dimension** in education at all levels and, by emphasising the cultural heritage of each Member State, to reinforce the spirit of European citizenship;
2. **to promote intensive cooperation** on a vast scale between institutions of the Member States at all levels of education thus improving intellectual and educational potential;
3. **to encourage teacher mobility** in order to give a European dimension to studies and to enhance the quality of teaching skills;
4. **to encourage student mobility** in order to enable them to complete their studies in another Member State thus contributing to the strengthening of the European dimension in education;
5. **to encourage academic recognition of diplomas**, periods of study and other qualifications in view to facilitating the development of a European area of cooperation within education.

2. Institutional contract

The Socrates Programme is both a continuation of the Erasmus Programme which keeps its name, and a new programme comprising an institutional contract. This new programme also benefits from the financial support that was accorded to the Erasmus programme i. e. :

- Financial support granted to universities for activities with a European dimension;
- institutional contracts (in view to organising exchanges for students and academic staff, to setting up ECTS, preparation of teaching programmes and courses, intensive programmes and study visits);
- university development programmes;
- grants for student mobility.

The main structural change in the organisation of financial support from the European Community for Erasmus programmes within the Socrates framework is the **introduction of the institutional contract.**

An "**institutional application**" which aims to secure an institutional contract with the Commission, **must contain a description of their European policy and of transnational activities that the university is prepared to implement,** irrespective of whether or not they are granted financial support from the Community. This support will be granted specifically for the setting up of the activities described in their application file.

The conditions governing the setting up and the funding of these activities **constitute the basis of the institutional contract** drawn up between the Commission and the university concerned.

Universities are in no way obliged to undertake projects in each of the sectors of activity which are eligible for financial support.

The institutional contract is a key element of the newly organized Erasmus Programme. It constitutes the legal instrument through which universities will be able to take the responsability of setting up, in collaboration with partners of their choice, a series of transnational activities in view to strengthening the European dimension in their work.

The aim of the newly organized Erasmus Programme is twofold:

- **Aid to universities** with the view to developing the European dimension of their activities;
- **aid to students** to enable them to cover the costs of an approved study programme in another Member State.

There are **complementary measures** which complete these two main actions and which were set up in order to help meet the objectives of the Socrates Programme in all fields of action including higher education. Furthermore establishments of higher education can also apply for financial support from other sections of the Socrates Programme.

As in the past the European Union will continue to give direct support to students accomplishing a period of study in another Member State.

The aim of the grant is to compensate the cost of mobility linked to studying abroad. The awarding of a grant depends on a formally attested assurance by the universities concerned that there will be academic recognition of periods of study in the other Member States. The grant system will continue to be managed by a network of national agencies.

3. Conclusions and recommendations

Professional activities undertaken by qualified pharmacists in Europe vary from one country to another (community pharmacy; hospital pharmacy; the chemical industry; the drug industry; the cosmetic industry; the food industry; research). The same can be said of the health services of the different countries.

Looking at the main sector (community pharmacies), which represents 60-70% of jobs offered to our students (in all EEC countries except Denmark), **it is obvious that teaching must be drug and patient oriented and include social sciences and economics** which are closely linked.

This training must necessarily enable the student **to acquire solid notions of physics, chemistry and biology and to relate to the chemistry/biology interface where pharmaceutical sciences are situated.** This calls for **multidisciplinary teaching** which is the **basis of all specialisations** which may be envisaged by the qualified pharmacist in his/her professional activities.

This implies that within Europe it is vital for students to receive, in common, an education which is adequate enough to enable them to practice their profession anywhere within the Community.

Bearing in mind the great variations from one country to another and at all levels, **it is of vital importance not so much to harmonise pharmacy studies (for example by having a common programme), but to define common teaching objectives which must be met so that pharmacy students can be awarded a mutually recognised diploma enabling them to work in the different countries of the Community. This means that ground work must be carried out in each discipline to this end, leaving it up to each professor and each faculty to determine the teaching methods and the time needed to meet those objectives.**

This system would have the advantage of leaving intact each faculty's identity and specificity whilst maintaining a predetermined framework which would be closely linked to professional practice.

If the aim is to see one day the free movement of pharmacists and of medicines, **the most motivated students must as from now have freedom of movement between the different European faculties.** The Erasmus Programme enables at least 500 students to benefit from such mobility but that is only a very small proportion of the 100, 000 students registered in pharmacy faculties throughout Europe or the 11, 000 who qualify annually. **This suggests that efforts must continue and that new programmes must be created, that mutual academic recognition must be achieved by the implementation of the ECTS system in institutions and that every teacher in every pharmacy faculty take an active interest in the European dimension of their task.**

The teaching of pharmacy within the EEC is recognised as being excellent. It is essential that this quality follow through to all levels of professional practice and that there be cooperation between academics and practitioners, the former keeping the latter informed of scientific innovations in pharmaceutical sciences while the latter guide the former towards the essential professional aspects which must be taught so that the practice of pharmacy be always to the highest possible standard.

Pharmacy has always been one of the key elements of all European health care systems and has always enabled patients to benefit from appropriate advice. In this era when new, very specific medicines are being developed using biotechnology, everyone should be aware of the need not only to update knowledge but also to transmit that knowledge to the young or to anyone else in the activity who may need it.

Annex

Members of the Scientific Committee and list of experts

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Pr. Werner(D)

Pr. Manes Vineusa(E)

Pr. Puisieux(F)

Pr. Macheras(GR)

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II

Tourism and Leisure

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European tourism and leisure education Trends and prospects

1. Introduction

This report provides a summary of the proceedings of the subject area evaluation conference in leisure and tourism organised by the European Association for Tourism and Leisure Education (ATLAS). The conference was held at Tilburg University in the Netherlands on December 12th and 13th 1994, and attracted over 100 delegates from 17 countries.

The conference was organised along similar lines to all the other subject area conferences supported by the Task Force Human resourses, Education, Training and Youth (15 in total) in order to provide comparability.

A Scientific Committee (See annex on page II-11) consisting of 16 experts from all EU Member States (except Luxembourg) was convened to compile the conference programme, select papers and to present reports on the trends and prospects for tourism and leisure education in each Member State. In addition, reviews were made of the national reports and the reports of Erasmus coordinators in order to provide an overview of transnational trends.

This report summarises the main proceedings of the conference, including the national reports, the transnational overviews and the action plan produced at the end of the conference.

2. Aims

The aim of the Tilburg conference was threefold:

First it was to review the current state of higher education in tourism and leisure in Europe, then identify development needs of the Erasmus Programme and finally identify areas for future action.

3. Objectives

A number of specific objectives were formulated for the conference, particularly with a view towards producing outputs that would be comparable with those of other subject area meetings being supported by DGXXII:

1) review the past experience of tourism and leisure programmes, comparing the development of provision and exchange activities in different EC Member States;
2) to identify areas in which specific developments are needed in order to address the issues raised in the national and transnational analyses;
3) to propose actions which can be undertaken to address the identified development needs in tourism and leisure education.

4. Projected outcomes

On the basis of the conference objects, a number of specific outputs were identified which would facilitate the consultation process surrounding the development of Socrates. The specific outputs were defined as:

1) national reviews of tourism and leisure education systems;
2) syntheses of national trends and identification of common issues;
3) action plan which can be implemented through the new Socrates programme and other initiatives;
4) identifying areas in which ATLAS and other international associations can play a role;
5) wider dissemination of the deliberations of the conference.

The basic outputs of the conference are contained in this report. The full proceedings have been published as a book by Tilburg University Press (Richards, 1995a).

Developing international perspectives An evaluation of the Erasmus scheme

Prepared by Greg Richards

Perspectives on the future development of leisure and tourism education are slowly but surely becoming internationalised. A major force for international developments has been the Erasmus student and staff exchange scheme, run by the European Commission. The history of student exchange and transnational curriculum development under the Erasmus programme is still relatively young; the first students began to move in 1987. Even so, the rapid expansion of students, staff and institutions involved in Erasmus activities means that a considerable body of experience has been developed in a relatively short time. This analysis attempts to distil the lessons of that experience for the tourism and leisure subject areas.

With help from the Erasmus Bureau and with access to statistical information and Inter-university Cooperation Programme (ICP) coordinators' reports, an evaluation was made of the programmes in the tourism and leisure areas from 1988 to 1994.

Tourism and leisure are still relatively small areas of Erasmus activity, in spite of the impressive growth in course provision at national level noted earlier. Erasmus statistics indicate that the number of tourism and leisure students participating in exchange programmes grew from 182 in 1989/90, to 463 in 1992/93, an average growth rate of almost 40% a year. Projections of the numbers of students taking up places indicates that the number of students moving in 1994/95 will be in the region of 700. In spite of this impressive growth, tourism and leisure students still account for less than 1% of the total Erasmus student mobility programme.

Although tourism and leisure is small in relation to the total Erasmus programme, the spread of tourism and leisure education to a growing number of institutions has produced an impressive increase in the number of participating institutions. The total number of universities involved in tourism and leisure exchange programmes was 43 in 1989/90, compared with 123 in 1993/94. Over the same period, there has also been a slight geographic shift in participation, away from the "Golden Triangle" (UK, France, Germany) towards peripheral regions, in line with the general policy of the Erasmus programme. The proportion of Golden Triangle universities fell from 40% in 1990 to 33% in 1994. This compares with about 46% of participation from these countries in the Erasmus programme overall in 1993/94. There have been particularly sharp increases in the number of participants from countries such as Ireland and Portugal, even though these countries account for a small percentage of total activity.

The number of student mobility programmes in tourism and leisure has grown from 3 in 1988 to 19 in 1994. Even so, the distribution of universities within networks is very uneven. By 1993 there were 4 networks consisting of just two universities, while one network had 25 members. Economies of scale were not therefore available in all programmes. In terms of network coordination, the domination of northern European countries is almost complete. Only one network was coordinated from southern Europe in 1993. The pattern seems to have been for networks to originate in northern Europe and then to search for southern European partners. In 1993/94 the search for expansion was extended to the Scandinavian countries, as the EFTA countries joined the Erasmus scheme.

The overall picture that emerges is that ICPs in tourism and leisure are still dominated by the larger Member States, but to a lesser extent than in most other subject areas. Tourism and leisure has also grown relatively rapidly over the last five years, with the growth in ICPs and student numbers outpacing the growth in Erasmus overall.

A review of the existing programmes shows what kinds of issues and problems have been encountered by the participating institutions over this time. Generic issues such as student accommodation and finance, are raised in almost every Erasmus report, regardless of country or subject area. While these generic issues are clearly not of specific concern to tourism and leisure educators, they are important background variables which influence the demand for and the experience of student exchanges. The finance issue was also identified in subsequent discussion as being directly responsible for a reduction in student demand for exchanges.

There were a number of other issues however, which seemed to have a specific tourism and leisure context.

1. Curriculum development and staff contacts

Curriculum development was seen as a major issue in Erasmus programmes, because of the increasing internationalisation of tourism and leisure consumption and production. Several institutions mentioned that they had developed new modules to internationalise the curriculum for both exchange students and home students. In one case, a whole degree course had been developed around international tourism, with student exchanges as a central feature of the course.

The degree of adaptation of the curriculum to international

education varied considerably however, owing to the existence of different national education systems. Institutions in northern Europe were generally much freer to adapt and change their curriculum than their partner institutions in the south. Some original aspirations to introduce common curriculum elements in different countries had therefore to be curtailed. Another limitation on the internationalisation of the curriculum was the lack of comparative teaching material. In at least two cases however, the contacts built up through Erasmus programmes had resulted in the production of new teaching methods which could be used to support the internationalisation of the curriculum (e.g. Bramham *et al.*, 1993).

Some lecturers felt that more transfer of knowledge between exchange programmes and the mainstream teaching programme was important. A comparative European element in the curriculum was felt not only to be beneficial for home students, but also was a way of giving exchange students a reference point in the study of tourism and leisure in the host institution.

Staff contacts promoted by exchange schemes were felt to be extremely important. Transnational courses in particular where seen as benefiting from regular meetings.

2. Academic Recognition

Concern was expressed by some institutions that no mechanism existed for the common recognition of courses at a European level. Although Erasmus schemes work on the basis of mutual recognition, there was concern that lack of agreement over the content and level of courses was undermining the basis of recognition. One lecturer remarked for example that, "it is difficult to award credit when the course followed abroad bears little relationship to the course followed in the home institution".

3. Student demand

At the beginning of the 1990s a drop in student demand began to be noted by some networks. Although it is not yet possible to support this perception with hard figures, the rate of demand growth seems to have reduced during this period. Most of the causes of this apparent decline in demand were generic, including the Gulf War, the recession and pressure on student grants. However there does remain a question as to whether student demand in these areas will hold up in future. This may well be true if, as one lecturer commented "the novelty value of Erasmus has worn off".

In some programmes it was also felt that the expectations of staff regarding the student response was over-optimistic, leading in some cases to over-estimation of student flows.

4. Student Choice

Because of the limited choice of courses in smaller countries, students can only study certain subjects by travelling abroad. Erasmus programmes can therefore effectively expand student choice. The different approaches to tourism and leisure education in different countries also allow students to gain different insights into the subject through exchange programmes. However, if the breadth of choice is to be maintained, then harmonisation of the curriculum in different countries should be limited.

It was also pointed out that in some institutions, the presence of Erasmus students can make some specialist courses viable, whereas they might not survive on domestic student demand alone. This may be an additional argument for preserving difference, and even increasing the degree of specialisation in certain areas to cater for a wider group of international students.

5. Work Placements

In some programmes a work placement is built into the exchange scheme. Placements can provide valuable experience of working in a different culture, as well as building up language skills. As the number of students on tourism and leisure courses grows however, finding good quality placements is becoming increasingly difficult. In one case the lack of placement opportunities was cited as a cause of declining student flows. Although this problem is encountered in many subject areas, in tourism it can be a particularly critical problem because of the customer contact role which is a part of most tourism placements. In order to secure placements abroad, therefore, the language skills of students need to be very high.

6. Languages

Even though language training has been recognised as a critical issue in most countries, problems are still being experienced in delivering languages through the existing curriculum. There are either not enough resources or space in the curriculum to provide sufficient language teaching to enable students to travel abroad, or the provision of tourism and leisure courses in English for exchange students is problematic.

7. Career prospects

Only one institution mentioned increased employment prospects as a benefit of the Erasmus scheme, although this could be strongly influenced by the structure of the evaluation form.

Given the international nature of the Erasmus scheme and the fact that many networks are coordinated from Northern Europe, it is not surprising that the issues raised did not vary much from one country to another.

Conference summary report

1. Day 1: Current challenges in Europe

Morning session

The conference was opened by a speech of welcome from Professor Theo Beckers, head of the Department of Leisure Studies at Tilburg University.

The aims, objectives and expected outcomes of the conference were then introduced by Greg Richards, ATLAS Coordinator.

The introductory session was followed by a series of workshop sessions in which the national reports were presented and discussed. Presentations were made on all EU Member States except Luxembourg and Austria (although a written report was later presented on Austria).

Following the national report presentations, a summary of the trends and issues raised by the national reports was made by Greg Richards.

1.1. Trends and issues in tourism and leisure education

A review of the main trends emerging from the national reports was undertaken to identify those issues of a transnational, European, rather than national nature. In spite of the diversity of the institutions and courses covered by the national reports, some clear trends and issues were identifiable.

1.1.1. The subject

One of the key problems at the outset of the conference was the definition of the subject area(s) involved. Tourism and leisure have evolved over the last 50 years or so from very different starting points. Tourism courses have largely developed from a hotel and catering background and have come to be located mainly in management or business studies environments. Leisure courses on the other hand, have developed historically from a sociological or policy studies perspective. This reflects the basic difference which existed between tourism and leisure as areas of social production (tourism) and social consumption (leisure). In recent years however, this division has begun to disappear as leisure has also become to be regarded as source of income and employment and is therefore increasingly approached from a production perspective as well (Richards, 1995b).

The focus of leisure and tourism varies to some extent in different countries. There seems to be a clear management core to most tourism courses, but leisure is more diverse. Leisure is integrated within tourism courses in Italy, is almost totally absent in Scandinavia, but has a clear identity in the UK and Germany. In some countries, such as the Netherlands, the UK and Germany, there is evidence of increasing convergence of courses and subject matter between tourism and leisure, but this is not present in all countries. It also needs to be asked whether convergence is in fact desirable, or whether diversity should be maintained in approaches to the subject in different European countries.

1.1.2. The curriculum

A common problem for both tourism and leisure courses is the uncertainty that often exists about the content and aims of the curriculum. In the UK for example, there has been a debate about the need for a core curriculum in tourism courses.

In a European context the question of a core curriculum becomes even more delicate. Given moves to harmonise qualifications in Europe, should there now be a European common core curriculum in tourism and leisure? Could we ever agree on the content of such a core? Given the fact that many courses now use the terms “European” or “International” in their titles, should there be some control on what such courses actually contain?

There is also debate about the level at which tourism should form part of the curriculum. Some of the national reports argue that tourism and leisure content can best be delivered at postgraduate level, after students have gained a broad range of basic skills. The pressure from industry however, is often to move to early specialisation. In the UK, tourism courses are available at all levels from secondary school to research degrees. In Denmark, there is no tourism at postgraduate level and very little undergraduate teaching.

In some countries, increasing student numbers are raising issues about how the curriculum is delivered. This is a particular problem in the UK, where tourism graduate numbers have soared in recent years. Many are advocating the extension of distance learning and provision for part-time students, particularly with a view to meeting the needs of industry. Those already in employment also pose a challenge for European exchange programmes — how do part-time students benefit from the European experience?

1.1.3. Validation

One problem of comparing courses in different countries and developing common courses or course elements is the different ways in which courses are validated. Institutions in some countries have more flexibility in course design than others. Institutions in the UK have a great deal of flexibility, while control in Greece, Spain and France tends to be more centralised. The degree of flexibility in fact seems to be increasing, but is this always a good idea? In view of the concerns expressed in some countries about the oversupply of tourism graduates, an easing of centralised control may create as many problems as it solves. A number of reports also called for the creation of a European system of course validation in order to improve the acceptance of tourism and leisure qualifications at European level.

1.1.4. Student numbers

One argument for flexibility in course design is to produce courses which more readily meet market needs in terms of student demand and the needs of employers. In the UK, the removal of controls on tourism and leisure courses led to an explosion of student numbers — a tenfold increase in tourism students in eight years. The growth in numbers of courses has also been dramatic, and this in turn has raised issues of quality and employment prospects. Oversupply therefore seems to be a problem in some countries, but not in some of the smaller states such as Denmark and Portugal. In Greece and Spain, where skill shortages in tourism are still acute, there is less concern about the number of students being produced, but far more about the sectoral specialisation of tourism graduates.

1.1.5. Employment

The employment prospects of graduates is always a key issue for course designers and there is growing pressure in some countries for courses to be more responsive to the labour market. There is evidence of a mismatch between supply and demand in most countries. In some cases, there may be too many tourism graduates — in the UK and Germany, about 50% of tourism graduates find jobs in tourism. In Germany however, the evidence is that the tourism industry needs more graduates — 2.5% of tourism staff have a degree, compared with 11% for industry as a whole. This suggests the existence of what some delegates referred to as an "academic gap" between the relatively low qualification levels of those in industry and the growing supply of graduates from tourism courses. Closing the academic gap is, according to some, a question of listening better to industry, but other commentators are not convinced that industry is always able to articulate exactly what it wants. What should the balance be between vocational and academic aspects of courses? Should courses combine these elements, or should there be more separation, as in the "Dual System" in Germany? Little consideration has so far been given to the needs of students moving between vocational and academic courses or vice-versa.

The unification of Europe also suggests that, in the future, the problems surrounding the employment of tourism and leisure graduates will need to be solved on a European, rather than a national basis.

1.1.6. Placements

Many tourism and leisure courses attempt to provide a vocational focus and/or practical training through the use of placements. Many courses are now also using European placements as a way of giving students experience of other cultures and working practices. Placement exchanges often come up against barriers created by different placement systems. In the UK for example, tourism courses usually have a one year placement which follows the traditional sandwich model of business studies courses. In Greece, the need for placement students is greatest in the summer months, which has created a 'thin sandwich' model of shorter placements. Shorter placements are also the norm in the Netherlands, where placements are often linked to student dissertations. As courses Europeanise, there is growing pressure for standardisation and for the creation of a centralised data bank of placement opportunities. The reality of placement arrangements however, is that contacts are maintained and jealously guarded by individual institutions.

1.1.7. Languages

Languages are clearly an issue in any course in which exchanges are taking place. Although some students can and do move without language skills, should we not be trying to increase the language ability of students? The more languages a student can master, the wider choice of exchange possibilities open up, but to what extent is this an issue for tourism and leisure courses? One might argue that it is more important in tourism, but the leisure industry is also becoming increasingly transnational. This question is also approached differently in each country. In the UK languages have already been ruled out as part of a 'core curriculum' for tourism, whereas in Spain and Greece language courses are a central government requirement.

1.1.8. Europeanisation and globalisation

Many more courses are being developed which have a European or International focus. This raises the issue of how the "European Dimension" which the European Commission is seeking to instil in educational provision, should be achieved. Should this be through individual student exchange, transnational programmes or intensive programmes? Should the students move or should we be concentrating more strongly on staff mobility?

What is the aim of "Europeanising" the curriculum? Should we be aiming for more similarity or more diversity? Should we be producing managers for Europe or managers that can help Europe compete in a global context?

These questions become even more vexed as "Europe" expands. Where do we draw the boundaries around the subject? Are there generic issues which are valid from the Baltic to the Balkans or are there different versions of "Europe" in tourism and leisure? Should tourism mean the same in the

generating countries of northern Europe as in the receiving countries of southern Europe? Does leisure have the same meaning in Helsinki as in London or Barcelona?

Afternoon session

The afternoon session was chaired by Professor Adri Dietvorst, Head of the Department of Recreation and Tourism Studies at Wageningen Agricultural University. The session was opened by Dr Eduardo Fayos Sola, Head of Education and Training at the World Tourism Organisation, on "Education and Training in the New Age of Tourism".

In his presentation, Dr Sola emphasised that the significant changes taking place in tourism, and the arrival of "the New Age of Tourism", demanded sweeping changes in the provision of tourism education as well. Human capital will become an increasingly important element of the tourism production process in the future, and therefore education and training will also have a growing role to play. As suppliers have to react to increasingly flexible demand patterns from the new age consumer, more emphasis will have to be given to total quality management. Designing appropriate education programmes will also be complicated by the variability of tourism supply and demand along three dimensions: different sectors of tourism supply; occupational patterns within different sectors; and the cultural variations between world regions. The required restructuring of tourism education can be supported by the activities of the WTO whose mission is, "to achieve quality in tourism education in response to the needs of the future professionals and employers in the tourism industry and of the member states". The WTO therefore seeks to define quality standards for tourism education, to identify the human capital requirements of tourism and to design appropriate tourism training programmes to meet these needs.

Following Dr Sola's presentation, Greg Richards presented the Erasmus Report for the tourism and leisure subject area. (See page II.4).

2. Day 2: the way forward

The second day of the conference was devoted to examining options for the future development of tourism and leisure education and exchange programmes. The first session, chaired by Dr Ian Henry of Loughborough University (UK), included a presentation on the new Socrates programme by Elizabeth Ogden of the European Commission, and a review of actions for the future from the national reports. This section summarises these presentations and the discussion which followed.

2.1. Action for the future: summary of national views

2.1.1. Definition of the subject

There was considerable discussion of the problem of definition and where to draw the boundaries of the subject areas. In some countries leisure does not exist as a subject (e.g. FIN) while in other areas it is subsumed within tourism (e.g. I). The problem of drawing boundaries around the subject compounds the problems of communicating course content to employers. Not only are tourism and leisure courses diverse in terms of content, but they are aimed at a wide range of different employers. An additional problem highlighted by Jan van der Borg (I) is the fact that many in the "industry" are also not sure what they want from a student, or at least find it difficult to articulate. John Swarbrooke (UK) pointed out that the industry may not be able to describe its need very accurately, but it recognises a good product when it sees it. It was suggested that one possible means to communicate the aims and content of courses more clearly to employers is the development of a common core curriculum.

2.1.2. A common core curriculum?

In order to support wider student exchange and to facilitate the validation and recognition of courses, it was suggested that attention should be paid to the development of a common core curriculum, perhaps in a number of distinct areas within tourism and leisure. This has already been attempted in the UK. It will clearly not be possible to define a rigid curriculum which is applicable across Europe and any such scheme must be flexible enough to take into account differences in both the nature of the tourism and leisure industries in different countries, as well as the different education systems involved.

2.1.3. Industry links

Many of the national reports emphasised the need to link courses more closely with the needs of industry. Given that there is currently an oversupply of tourism graduates in many countries, courses should be tailored more closely to the needs of industry to ensure a closer fit between educational supply and labour demand.

There was considerable debate on the issue of how far courses should be oriented towards economic and job-related issues and how far a broader, liberal educational orientation should be striven for. Eric Corijn (B) argued that there was a difference between understanding leisure behaviour and managing it. Many courses only teach management, without giving students the tools for really understanding the nature of the phenomena they are trying to manage. He pleaded for a broader approach to curriculum design and for the use of exchanges to broaden the social and cultural horizons of students.

2.1.4. The labour market and the "academic gap"

In spite of concerns about the oversupply of courses, it is also recognised that in many countries the academic level of tourism and leisure industry employees is still below that in comparable industry sectors. As the tourism and leisure industry will have to compete more keenly for human resources in future, it is also important to address this question and to examine how an apparent oversupply of graduates can exist at the same time as an under qualified workforce.

In relation to the job market, there was a division of opinion as to whether generalists or specialists were needed. It was pointed out by Rea Brunila (FIN) that tourism graduates can also follow careers in the wider social and commercial sectors. More extension of tourism courses into new areas, such as sustainability was advocated by Han van der Voet (NL). Adri Dietvorst (NL) pointed out that career prospects are to some extent dependent on student numbers. At the moment there seems to be a problem of oversupply of tourism and leisure graduates. At the same time, escalating qualification levels are poised against a low intake level of tourism graduates in the industry, damaging the career prospects for those who do get a job.

It became clear however, that while many countries had identified an oversupply of tourism graduates (e.g. UK, NL, D), in other countries (e.g. DK) there is hardly any provision of tourism education at university level. Phil Goulding (UK) argued that transnational research is needed into the employment needs in tourism and leisure in Europe, with the same questions being asked in each country. Only in this way can the entire European job market be brought into perspective, and sensible decisions made about the fit between course supply and employment demand. However, students go into a wide range of different careers when they graduate, so a narrow fit between student output and jobs is not strictly necessary. It may also be undesirable, given the speed with which the industry moves and the long lead times required to develop courses and produce graduates.

2.1.5. The European dimension

A basic aim of the European Commission is to try and ensure that a European dimension is built into educational provision in the European Union, and that educational programmes contribute to the social and cultural solidarity of Europe. In the past, the main tool for achieving such aims in higher education has been the Erasmus programme. As the analysis of the Erasmus programme has already shown, lack of resources means that student exchange schemes and other mobility-based measures can only affect a small proportion of the student population. In future therefore, the emphasis of EU policy in this area will change.

Elizabeth Ogden of the European Commission outlined the main features of the new Socrates scheme, which will replace Erasmus in future. The most important change from the point of view of exchanges is that the existing ICPs will be replaced by institutional contracts. Individual universities will therefore have a contract with the Commission which will cover all their student and staff exchange activities, rather than the many separate contracts now in operation. A further major change will be the development of "horizontal measures", designed to stimulate activities across groups of universities at a European level. One of the possibilities under this action will be the funding of activities of subject groupings of universities or university departments. This would mean that pan-European subject associations such as ATLAS, would be eligible to have some activities funded, as long as they fall within the educational remit of Socrates.

Elizabeth Ogden emphasised the new opportunities opened up by Socrates, particularly for students who had not been able to take advantage of Erasmus. In particular, the issue of non-mobile students has become central to the new policy. In the Socrates programme, more attention will be paid to the Europeanisation of the curriculum, with the aim of bringing the wider benefits of inter-cultural exchange to students who are not able to participate in exchanges. Other delegates indicated the need to build research links in order to provide the academic underpinning for the Europeanisation of the curriculum, as most research and research funding is currently based nationally. The European Commission representatives indicated that Socrates was not designed to support research, but that there were possibilities to use Socrates funding to support research in some instances. Delegates were advised to make use of other European research programmes to support research which could then be fed into Socrates projects.

A number of suggestions for supporting the Europeanisation of the curriculum were made by delegates, many of which could form the basis for projects under Socrates. One interesting suggestion was that a prize should be instituted for the best textbook in tourism or leisure in Europe every year. The winning text would then be translated into a number of different languages to support the dissemination of research and learning materials to institutions across Europe.

2.1.6. Linking exchange programmes and the mainstream curriculum

In many institutions the exchange process is not integrated fully into mainstream courses, but operates as a closed system. The knowledge students gain abroad is rarely fed back into teaching and learning in the home institution, either because of the timing of the exchange period, or because courses are not designed to facilitate this. More thought needs to be given to using the valuable resource represented by the direct student experience of other countries. Much benefit could be gained, for example, from asking exchange students to lead seminars on cultural differences between their home and host countries, or through research projects examining areas of difference and similarity between nations and regions.

2.1.7. Accreditation

There is a need for transnational accreditation of tourism and leisure courses. This is important not only for students who may go on to work or study in another country, but also for the growing number of transnational courses. At present, transnational courses have to be validated on the basis of individual institutions. In the future, there will be a growing need for a system which will facilitate validation by a single body.

Eric Corijn (B) argued that in order to understand leisure in a European context, there was a need for more transnational education programmes. However, at present these courses receive no recognition at a European level. The Commission representative pointed out that it was not possible for the European Commission to act in this area, because it is not competent to intervene in national education systems or to validate courses. It was suggested that it might be possible to

construct programmes which could be recognised by international associations (such as ATLAS) and industry bodies, thereby giving both academic and industry credibility.

2.1.8. Maintaining difference

While recognising that some degree of convergence may be desirable from an administrative point of view, it is also important to maintain the current distinctiveness of tourism and leisure education programmes in Europe. Unless there are sufficient differences between programmes offered in different countries, there will be little academic incentive for students to travel. Developing regional specialisation could give a particularly prominent role to institutions in peripheral regions, and the new Socrates programme might provide opportunities to develop courses combining European common core units with regional "options".

2.1.9. Improved evaluation of exchange experiences

Problems have been experienced on exchange schemes not only in terms of the registration and conversion of formal grades and credits for course studies abroad, but also in accrediting the wider aspects of study abroad. In some cases for example, exchanges involve work placement, for which formal credits are seldom given. For other students, cultural experiences are often the most valuable aspect of the exchange, but this is rarely reflected in their record. Systems of evaluation therefore need to be developed which can deal not only with taught courses, but also with the less tangible elements of the exchange. Only by stressing the "added value" of cultural, linguistic and academic experience alongside the credits which students gain from the exchange can we encourage more students to invest time and money in participating in exchanges. In order to achieve this, thought should be given to developing student profiles which include not just academic grades, but also social and cultural skills developed abroad.

2.1.10. Innovation systems

In an increasingly competitive commercial and educational environment, there will be a growing need in future for courses to be innovative and to develop innovation among students. Students should be taught not only about new ideas emerging from the rapidly changing tourism and leisure industries themselves, but should also be encouraged to think innovatively, in order to maintain the creative edge which Europe enjoys in these fields.

3. Action for the future

The conference closed with a discussion of the proposed ATLAS Action Plan. The Action Plan had been drawn up by the Scientific Committee in response to issues raised during the conference. The Action Plan is designed to act as a focus for future activities of ATLAS, in order to ensure that the enthusiasm created by the conference does not immediately dissipate. The Action Plan is particularly aimed at preparing for new actions under Socrates.

3.1. The ATLAS Action Plan

The ATLAS Action Plan aims to support the development of international education programmes in tourism and leisure in a number of key areas:

Curriculum development

- Develop a "core curriculum" for tourism and leisure courses in Europe;
- examine the required balance of vocational and academic courses;
- identify the skills and knowledge basis for appropriate tourism and leisure courses;
- stimulate the production of tourism and leisure textbooks appropriate for transnational courses;
- facilitate credit transfer through the development of the European Credit Transfer System for tourism and leisure;
- identify appropriate means of implementing Europeanisation of the curriculum.

External relationships

- Identify more effective mechanisms for supporting international placements;
- research the needs of the labour market and the nature of the "academic gap" on a European basis;
- identify areas of innovation in tourism and leisure for future course development;
- communicate the benefits of course provision more effectively to employers;
- investigate the feasibility of European recognition of tourism and leisure courses.

Student mobility

- Find more effective methods of assessing the student exchange experience;
- increase linkages between student exchanges and mainstream education programmes;
- lower barriers to exchange participation for key student groups (e.g. part-time students).

3.2. References

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Richards, G. (1995b) Politics of national tourism policy in Britain. *Leisure Studies*, 14, 153-173.

Annex
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III

Chemistry in Europe Past achievements and future directions

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Erasmus programmes of cooperation in chemical education

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1. Introduction

Under the Erasmus Programme, chemical education may be divided into ECTS activities (European Credit Transfer System), and ICP activities (Inter-University Cooperation Programmes). ICPs may include one to four of the following activities:

1) Student mobility;

2) teaching staff mobility;

3) curriculum development;

4) intensive programme.

In the early stages of Erasmus ICPs have been oriented to student mobility. Only recently have the other activities been included. These activities will not be discussed here because there is insufficient significant data.

Comparatively speaking, ICPs are more significant than ECTS[1] because all Higher Education Institutions (HEI) are potential participants (personal initiative), while ECTS is restricted to a few HEIs (institutional participation). For chemistry students, 98.3% are exchanged through ICPs while only 1.7% are exchanged through ECTS (Fig. 1).

2. ECTS programme

The ECTS programme in chemistry includes the 33 HEIs listed in Table 1, with an active participation of 305 students during the academic year 1993/94. Fig. 2 shows the results of comparing the number of exchanges under the ECTS programme in chemistry and the total number of exchanges for all different ECTS programmes (1920 students). Chemistry results are very favourable, being responsible for 16% of the exchanges.

[1] The ECTS Pilot phase ran from 1989-1995 and applied to 5 subjects only and 145 HEIs.

Figure 1 : ICP vs ECTS 1993/94

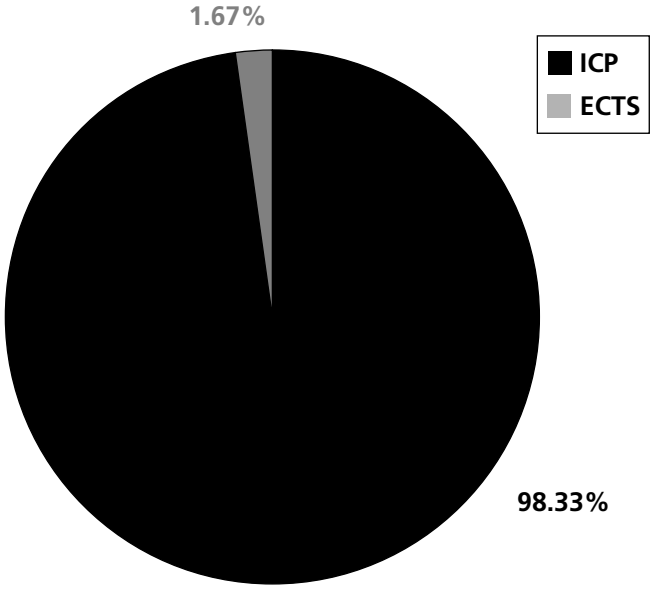
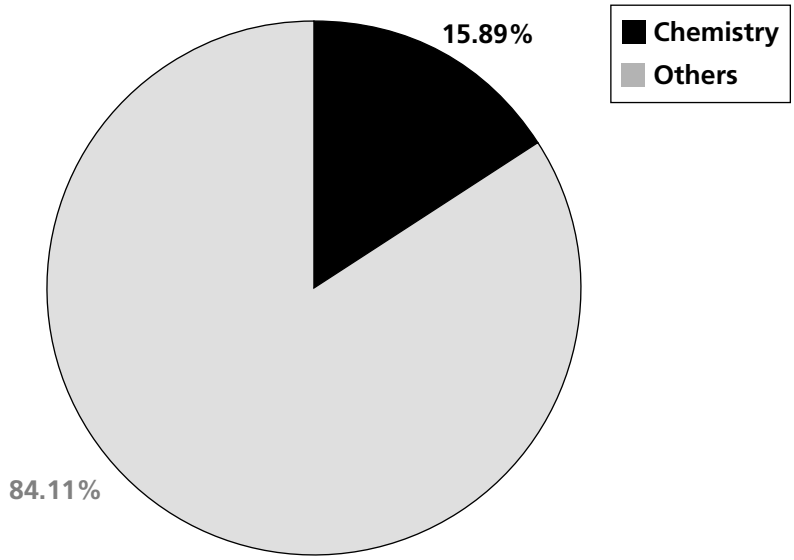


Figure 2 : ECTS (Chemistry vs Total)



3. Student flows in ECTS

ECTS activities started in 1989/90 and the number of chemistry students participating annually is now reaching 300. This is a very good rate for the cooperation of the 33 HEIs mentioned in Table 1.

The pattern of the institutions exchanges is almost random year after year, but the scope of students exchanged per country is almost constant through the five years experience of this Programme. Fig. 3 shows for 1993/94, the flow of students abroad (out) and students hosted (in) by each participating country. The EFTA countries were restricted to sending their students to the EC countries.

As will be shown later, this pattern is similar to that of other exchanges in chemistry outside the ECTS scheme and to the total exchange distribution between countries in the Erasmus Programme.

4. ICPs in chemistry

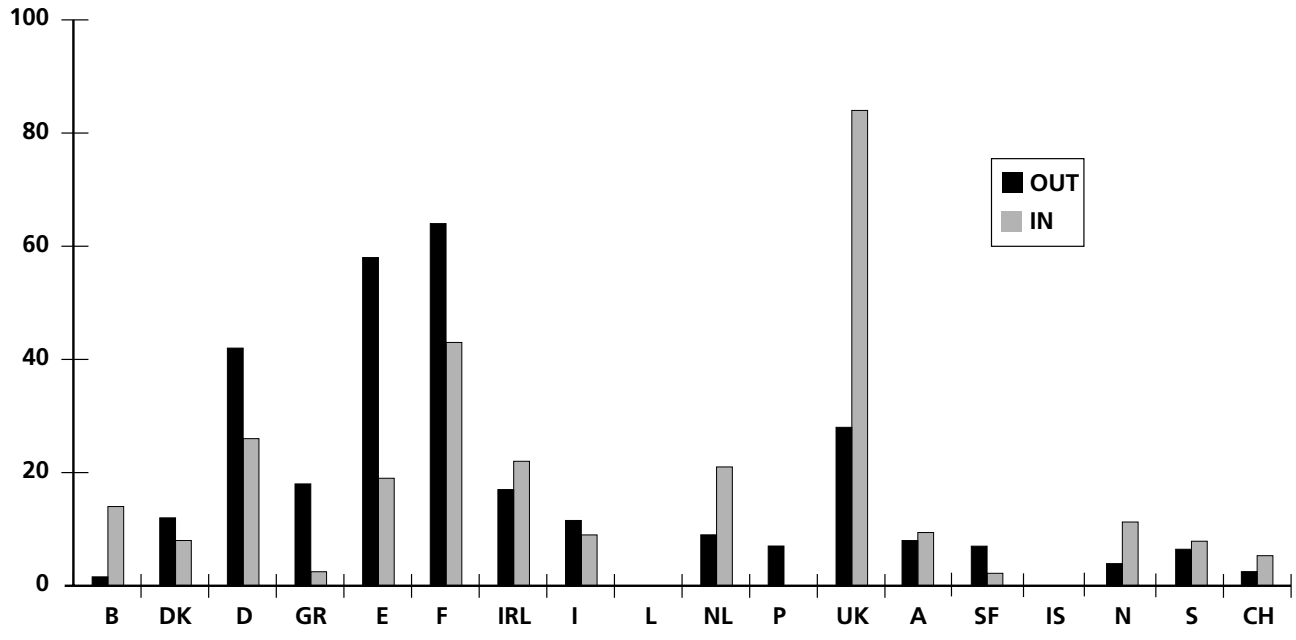
In order to review the ICPs in the chemical education, it should be noted that chemistry is not only a subject in academic curricula in its own right, but a common field in many scientific and technical studies. Nevertheless, only those areas in which chemistry is found to a substantial extent will be considered in this report. Table 2 schematically shows the subject area codes used by the Erasmus Programme to classify activities. The sub-area "chemical engineering" is included in area 6. Chemical engineering studies have a significant chemistry component. Some countries still group those studies together with chemistry (same degree). The sub-areas "chemistry" and "biochemistry" are included in area 13, "natural sciences". These three sub-areas have been considered in order to review the chemistry ICPs. Some multidisciplinary ICPs in which activities in one of the three chemical education sub-areas are shared with other subjects (for instance, "chemical engineering", and "mechanical engineering" or "chemistry and biology") are also considered. For computer-generated statistics, only the first section written in the application form is taken into account for ICP definition, but in this report, whenever possible, all ICPs in which chemistry, chemical engineering or biochemistry are present, are included.

Fig. 4 shows the percentage of subject areas 6 and 13 relative to the total number of ICPs for 1993/94. Note that chemistry and biochemistry represent 41.5% of the total area of natural sciences and that chemical engineering represents 8.6% of engineering. The total participation of chemistry is 4.3% of the total number of ICPs in the Erasmus Programme. It may be concluded that chemistry has a solid participation under the Erasmus Programme.

5. Institutions in ICPs

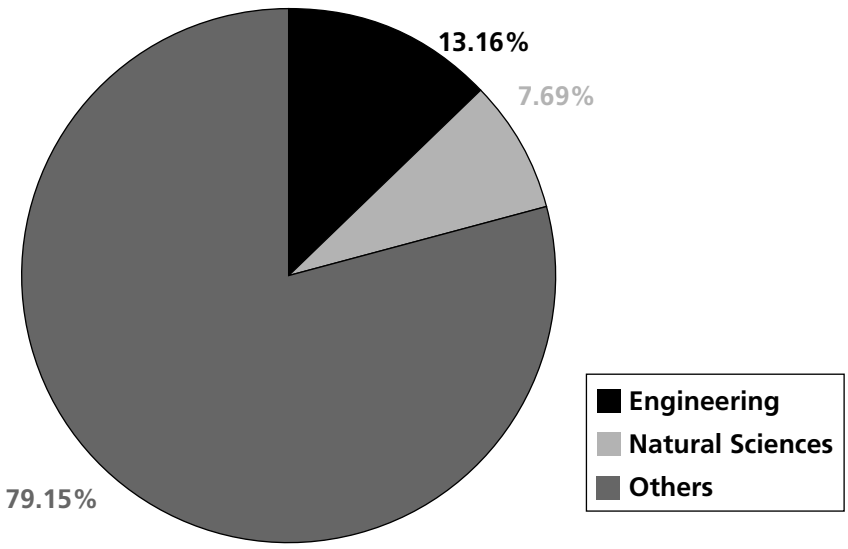
In order to know the evolution of the number of HEIs participating in chemistry ICPs, Fig. 5 shows the number of HEIs per country during the last three academic years.

Figure 3 : ECTS 1993/94



Student flows in Chemistry

Figure 4 : Approved ICPs in 1993/94



∑ Chemistry Prog. = 4.33%

It may be concluded that the number of HEIs increased from 1992/93 to 1993/94 and decreased from 1993/94 to 1994/95. Since the population, number of chemistry students, and number of HEIs in each country is different, data plotted in Fig. 5 should be analysed comparatively to the student population in each country.

A different plot for the same number of ICPs is given in Fig. 6, where each column represents the number of ICPs coordinated by each country. It seems that Belgium and the UK are coordinating a large percentage of ICPs, compared to their participation by number of HEIs. On the other hand Spain, Italy and Portugal coordinate only a few.

6. Chemistry and chemical engineering participation

Fig. 7 shows the three-year evolution of the number of ICPs in chemistry, chemical engineering and of those ICPs shared with other areas (multidisciplinary ICPs). It may be surprising that the highest numbers correspond to chemistry itself (only chemistry). This is an important argument in favour of the presence of chemistry in universities, the universality of chemistry, the multinational relations of chemists and, more optimistically, the motivation for the achievement of an international curriculum in chemistry.

7. Student mobility

It is clear that Student mobility is the main activity in ICPs.

Fig. 8 shows the number of ICPs dedicated to student mobility during the last three years and the number of ICPs dedicated to teaching staff mobility, curriculum development or intensive programmes. Student mobility is not only the main activity in ICPs but also the driving force of the other three activities because the number of ICPs which do not include student mobility is almost negligible.

Tables 3 to 6 show, for each of the four Erasmus activities, the total number of ICPs (under the heading Erasmus); the number of ICPs in chemistry and biochemistry (multidisciplinary ICPs are not included); and their respective percentage over the total number of ICPs.

The relative number of chemistry ICPs in 1988/89 was higher than in the following years. This effect may be explained in terms of motivation. It may mean that chemists, already motivated for international cooperation, responded early to the Erasmus call for proposals. In successive years, the response of other areas increased, the relative number of chemistry ICPs decreased to become stable at about 2.3% (chemistry only, multidisciplinary programmes excluded). There is also an opposite reading of Table 3. It could be possible that chemistry ICPs did not grow in parallel with other areas because of some lack of interest. Those who defend this reading argue that the Erasmus budget per HEI has been progressively decreasing year by year, reaching such low levels of financial support that there is not enough money to cover the expenses of the hosted students in the laboratory. Although this is true, the opinion that ICPs were not interrupted because of little money is more acceptable, therefore the first reading is more appropriate.

Figure 5 : Erasmus ICPs

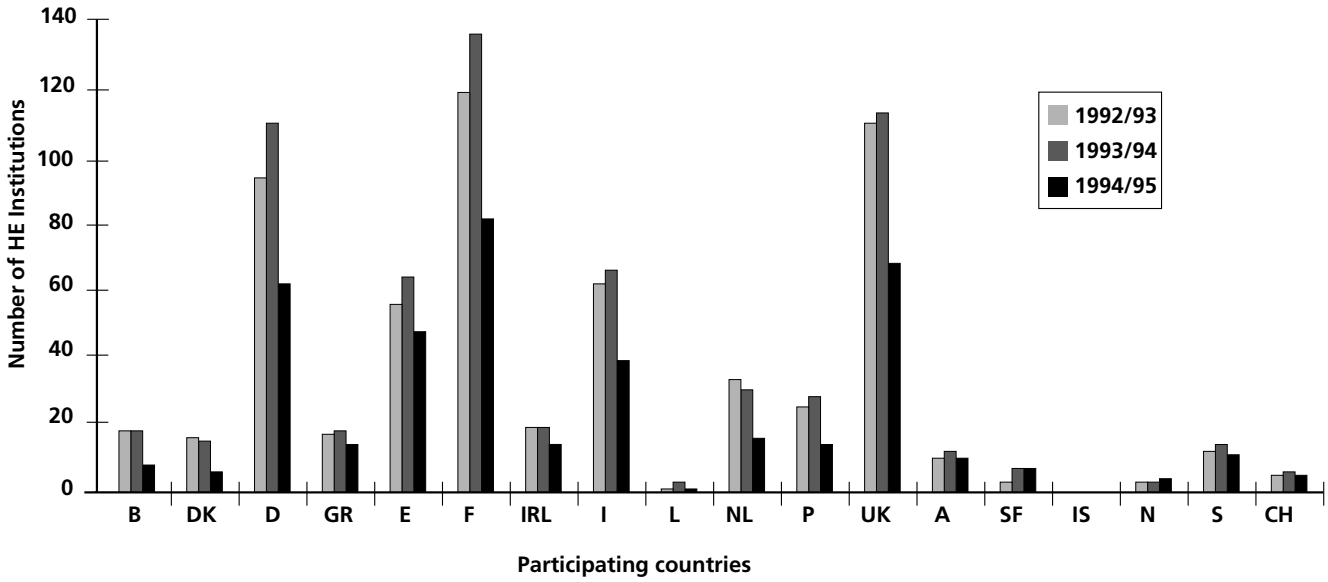


Figure 6 : Number of ICPs coordinated by participating countries

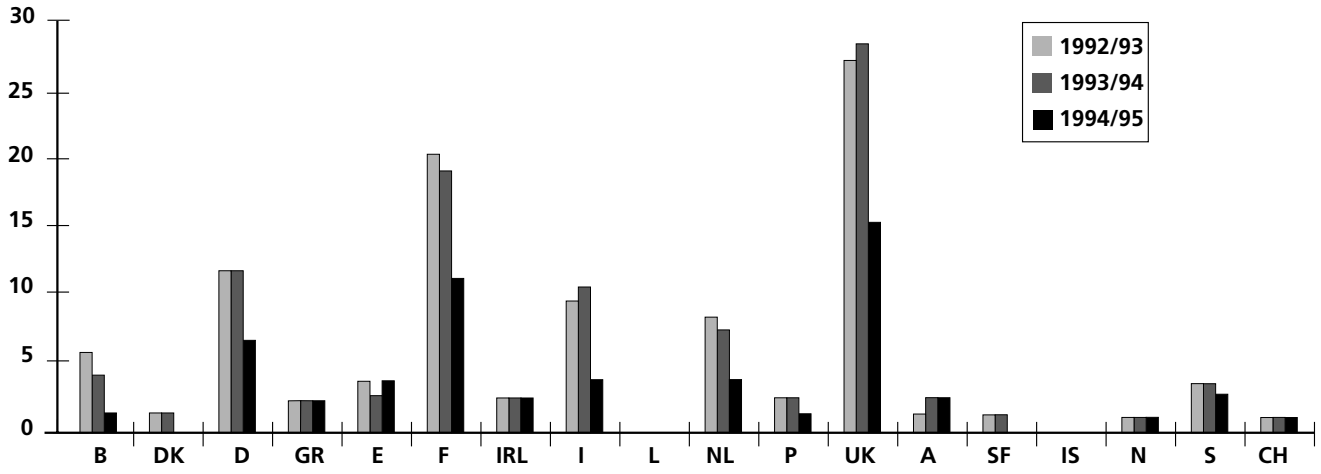


Figure 7 : Number of ICPs per subject area

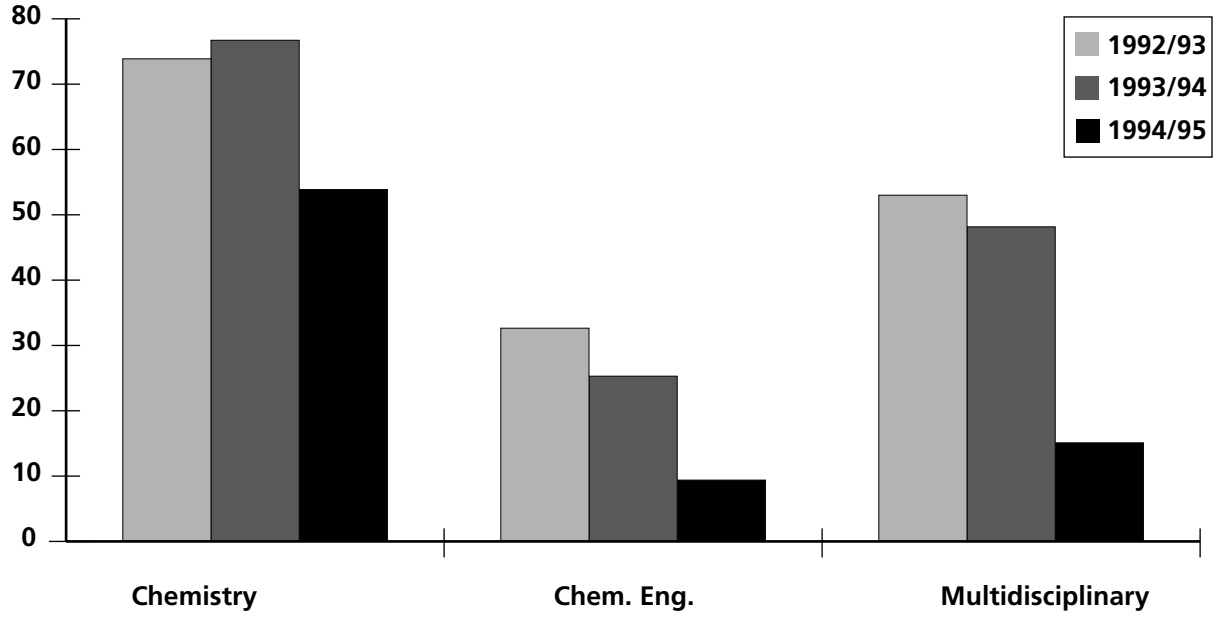


Figure 8 : Erasmus ICPs (activities)

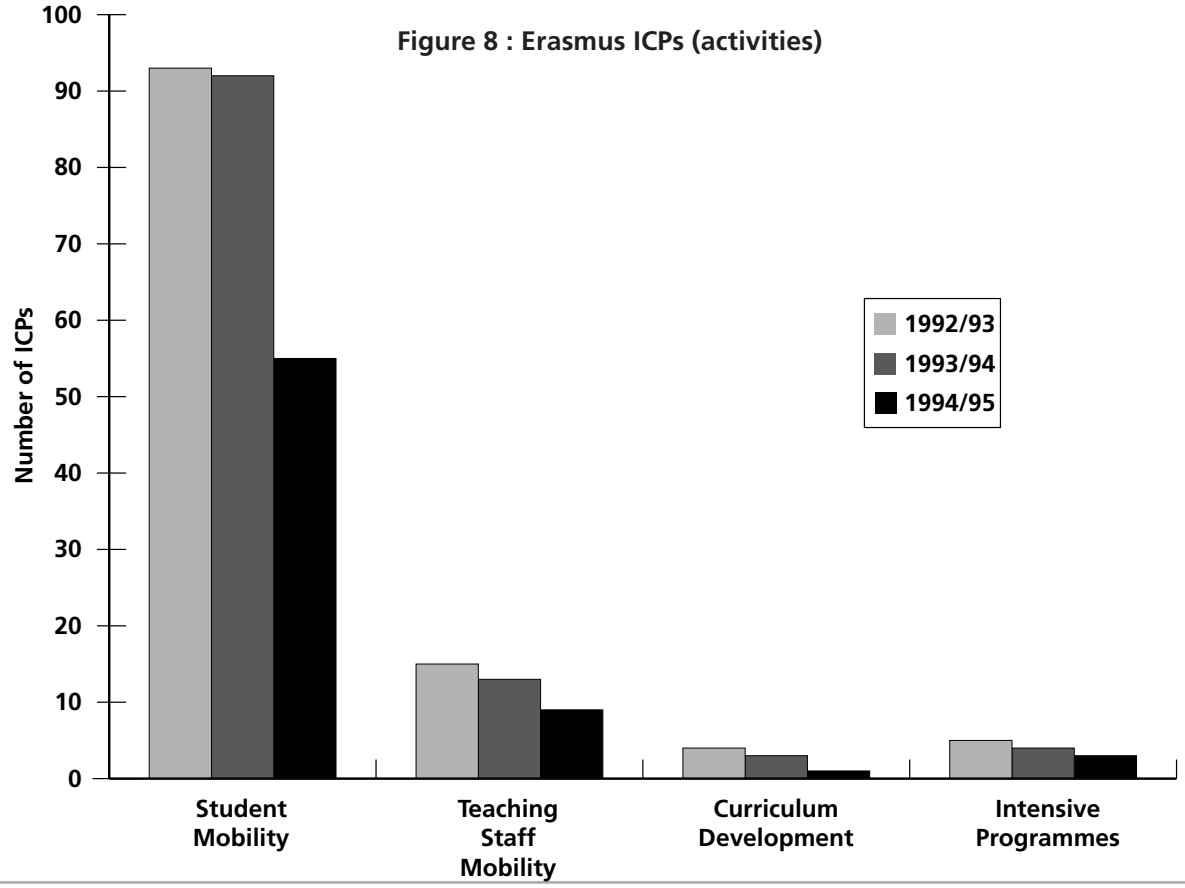
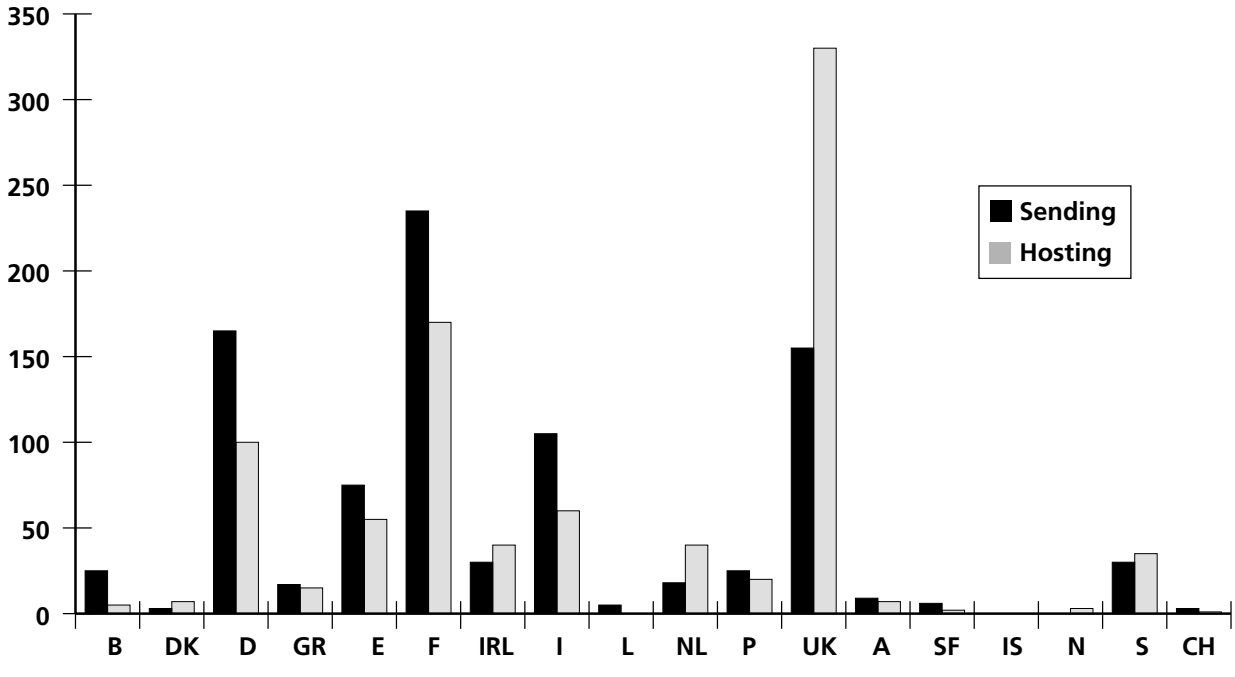


Figure 9 : Student exchange in 1993/94 (ICPs in Chemistry only)



7.1. Student mobility — Distribution by countries

Fig. 9 shows the number of students sent and hosted by each participating state during 1993/94 over all the ICPs studied. Similar plots may be obtained for previous years. It may be observed that the relative numbers for the ICP programmes in Fig. 9, do not differ from those given in Fig. 3 (ECTS). Student mobility, from the point of view of chemistry students, seems to present the same advantages and disadvantages either under ICP or ECTS.

Observing the absolute values in Fig. 9, it is clear which countries are mostly senders, hosts, or in balance, which are the language barriers, etc. The positive conclusion is that chemistry students do not face significant difficulties when moving within Europe despite the different curricula, different academic calendars, etc.

7.2. Student mobility – Duration of visits

Table 7 shows the number of students who spent three months, six months or one year at another University during 1993/94. It may be observed that shorter periods are slightly more frequent but no clear conclusions can be drawn concerning preference for any of the three periods of time. Student mobility is almost equally distributed over trimesters, semesters, of full academic years. Some conclusions can be reached for each particular country depending on the academic calendar in each.

8. Which is the typical ICP size?

There is not a definitive answer to the above question. ICP size, measured by the number of HEIs participating, ranges from 2 (minimum) to 30 (maximum known in chemistry). The arithmetic average of HEIs was 6.3 in 1992/93; 6.9 in 1993/94; and 7.2 in 1994/95. In order to study the evolution of ICP size, groups formed by the smallest, largest and the average sized programmes with two or more years of existence up to 1994/95 have been chosen.

All programmes with 15 or more HEIs in their last contract for 1994/95 were considered as large ICPs. There were 7 ICPs of this size. The four-year evolution of the 7 large ICPs is plotted in Fig. 10. Fastest growth takes place when the ICP is still small, while little or no growth at all is observed when the ICP is already large (when it has for example, more than 15 HEIs).

All programmes involving from 7 to 10 HEIs in their last contract for 1994/95 are considered average ICPs. There were 7 ICPs of this size, and their evolution is shown in Fig. 11. There were no average ICPs starting in 1990/91. It may be observed that fast growth takes place when the ICP starts with a few partners and that some of these ICPs seem to have stabilised their growth.

Finally, all programmes involving from 2 to 4 HEIs in their last contract for 1994/95 are considered small ICPs, of which there were 17. The behaviour of small ICPs is quite different, as may be observed in Fig. 12. It seems that the small ICPs do not try

Figure 10 : Universities/ICP for large networks (15-20)

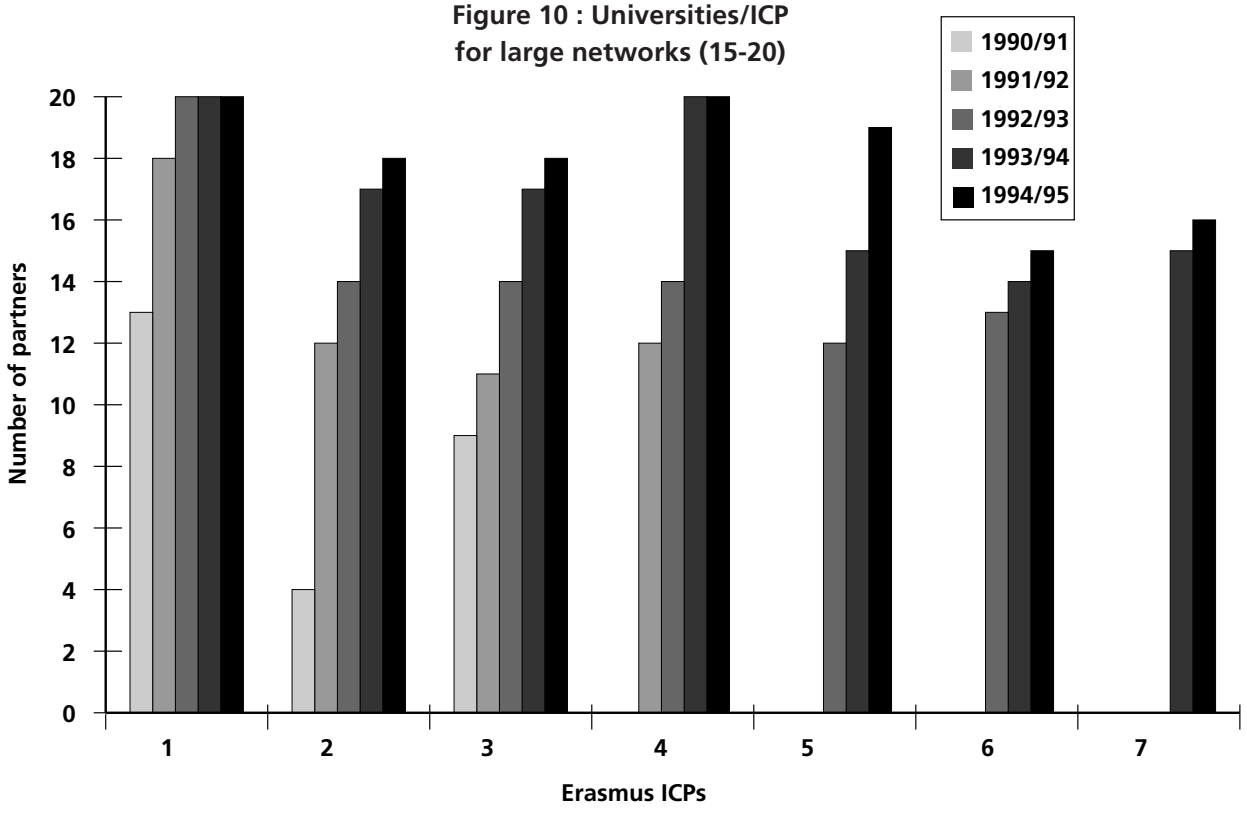
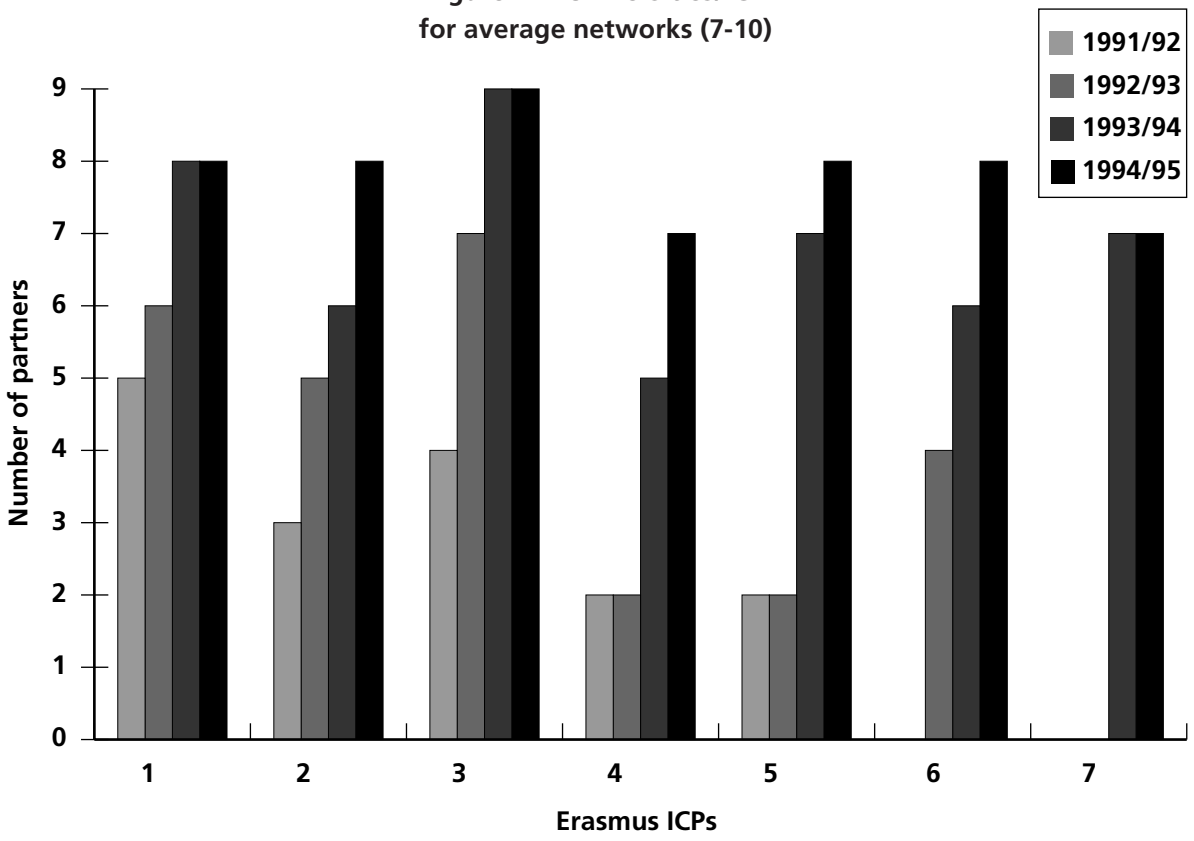


Figure 11 : Universities/ICP for average networks (7-10)



to grow. Several reasons may be given: easier coordination, high specialisation, routine, easy flow between two countries, or two languages, etc.

In any case the conclusions are that ICPs grow year after year until they reach what is seems to be the critical size, which could be near 20 HEIs. On the other hand, the small ICPs do not conform to this general behaviour, because they do not involve a significant number of fellowships.

9. What is the typical number of students per ICP?

Once again there is no definitive answer to this question. The number of students per ICP ranges from ten students per partner, to 1 or 2. A new question arises: is it more positive to exchange many students or to exchange a few? There are numerous opinions and all of them can be based on fact.

Fig. 13 shows the evolution of the same ICPs considered in Fig. 10 to 12, excluding those who have the same values (commonly in small ICPs). The behaviour of large, average and small ICP is represented in the same plot. It may be observed that for the ICP with more students (7-11 students per HEI), evolution is downward (difficulties to manage so many students?). ICPs managing 4 to 7 students per HEI seem to have stability over three years. In this case it is possible to risk a conclusion about the apparent "ideal" number of students per HEI, which may be between 3 and 7.

10. Mobility efficiency

It is known that students consider various personal aspects before they decide to visit another university. Sometimes they change their mind at the last moment. It might be interesting to know how chemistry students behave in this respect compared with other students.

Fig. 14 shows a plot for the total Erasmus student mobility since 1989/90. Approved mobility means the total number of fellowships approved for the funded ICPs each year. Actual mobility is the number of students that went abroad according to information from the final report (data for 1993/94 are not available yet). Fig. 14 also shows a similar plot for chemistry students, while Fig. 15 compares the percentage of student mobility for the total Erasmus Programme and for chemistry ICPs.

It may be concluded that chemistry students give similar results to those of the other students. A second consequence may be derived. Efficiency is decreasing year by year. This may

Figure 12 : Universities/ICP for small networks (2-4)

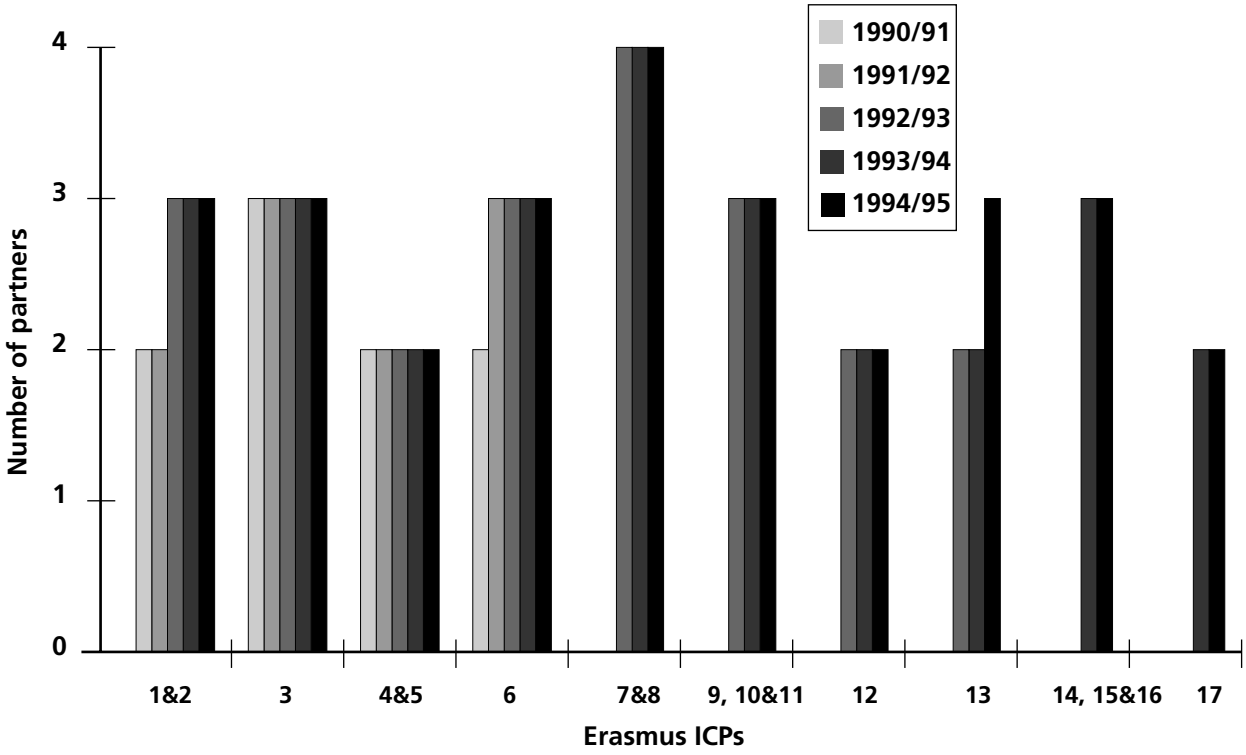


Figure 13 : Number of students per chemistry network

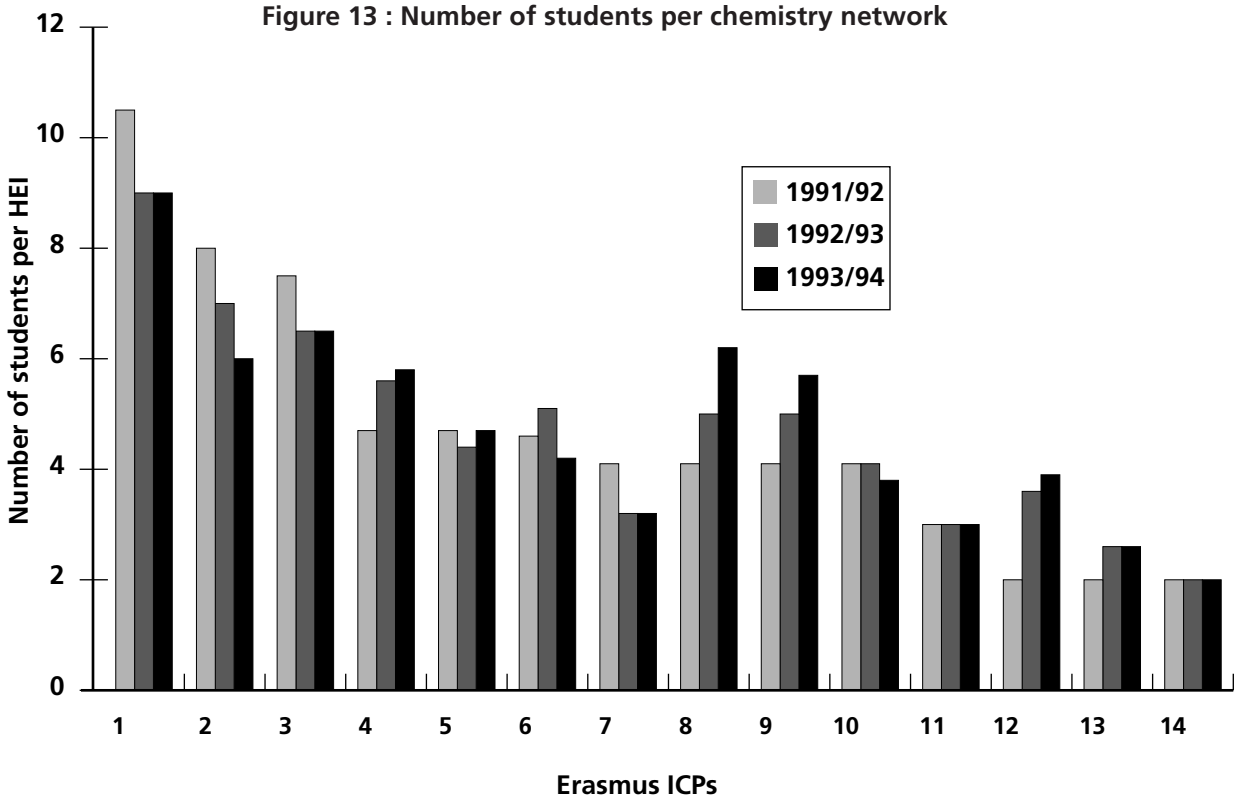


Figure 14 : Erasmus mobility (students)

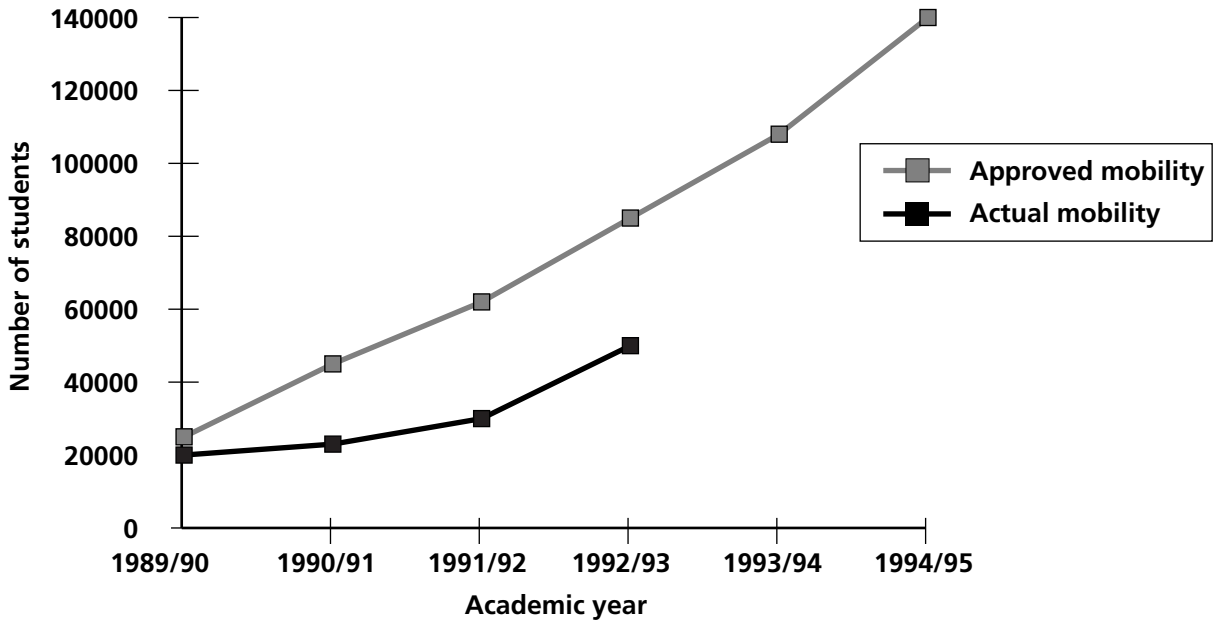
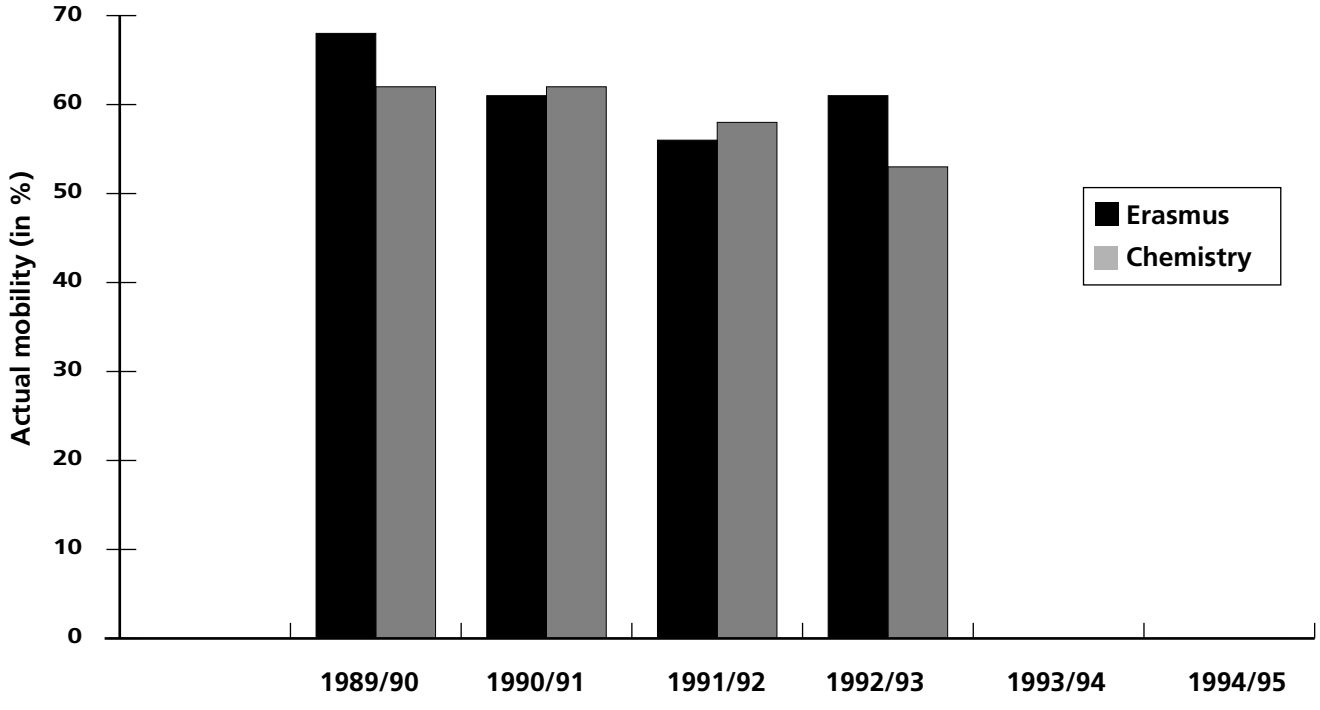


Figure 15 : Actual Student Mobility (in %)



be due to the financial aid that the Erasmus fellowships represent for the student. **This aid is going down while living expenses, travelling and other costs are going up.** It is known that some Member States **reinforce Erasmus fellowships** to some extent and often allow students to **shorten their stay** in order to have more money per month, **or merge two fellowships in one student.** All these situations draw attention to the need to guarantee the future of Erasmus student mobility that everybody accepts as the most positive issue at university level for European integration.

Table 1

ECTS-Chemistry Participating Universities	
B	Université de l'État de Liège
DK	Arthus Universitet
D	Technische Universität Berlin Ruprecht-Karls-Universität Heidelberg Friedrich-Schiller-Universität Jena
GR	University of Ioannina University of Patras
E	Universidad del País Vasco Universidad Complutense de Madrid Universidad de Santiago de Compostela
F	École Supérieure de chimie industrielle de Lyon Université Paris XI Institut National Polytechnique de Toulouse ENSC Montpellier Université Paul Sabatier-Toulouse III
IRL	Dublin City University University of Dublin
I	Università degli studi della Calabria Università degli studi di Padova Università degli studi di Pavia
NL	Universiteit van Amsterdam Rijksuniversiteit Utrech
P	Universidade de Aveiro
UK	University of Kent at Canterbury University of Greenwich, London The Manchester Metropolitan University University of Northumbria, Newcastle University of Strathclyde
A	Technise Universität Wien
SF	University of Oulu
N	University of Bergen
S	University of Lund
CH	Eldgenössische Technische Hochschule Zürich
Total	33 Universities

11. Acknowledgements

The author would like to thank Prof. J. Huet (ESCIL, Lyon); Ms. R. Inés (NGAA, Spain); Prof. R. Paganni (International relations UCM); Ms I. Kunhat (EU Programmes, UCM) for patiently providing advice, help and information during the different stages of this presentation.

Table 2

SUBJECT AREA CODES

1	Agricultural Sciences
2	Architecture
3	Art
4	Business Studies
5	Education
6	Engineering
6.3	**Chem. Eng.**
7	Geography
8	Humanities
9	Languages
10	Law
11	Mathematics
12	Medical Sciences
13	Natural Sciences
13.3	**Chemistry**
13.6	**Biochemistry**
14	Social Sciences
15	Communication
16	Other areas

Table 3 : STUDENT MOBILITY (number of ICPs)

	ERASMUS	CHEMISTRY	%	BIOCHEMISTRY	%
1988/89	962	29	3.01	7	0.73
1989/90	1348	37	2.74	7	0.52
1990/91	1592	46	2.89	5	0.31
1991/92	1661	36	2.17	2	0.12
1992/93	1984	46	2.32	3	0.15
1993/94	2217	54	2.44	3	0.14
1994/95	2330	54	2.32	4	0.17

Table 4 : TEACHING STAFF MOBILITY (number of ICPs)

	ERASMUS	CHEMISTRY	%	BIOCHEMISTRY	%
1988/89	213	7	3.29	1	0.47
1989/90	272	4	1.47	3	1.10
1990/91	277	4	1.44	1	0.36
1991/92	341	5	1.47	0	0.00
1992/93	418	5	1.20	0	0.00
1993/94	546	8	1.47	0	0.00
1994/95	666	7	1.05	1	0.15

Table 5 : INTENSIVE PROGRAMMES (number of ICPs)

	ERASMUS	CHEMISTRY	%	BIOCHEMISTRY	%
1988/89	71	2	2.82	2	2.82
1989/90	104	1	0.96	0	0.00
1990/91	114	0	0.00	0	0.00
1991/92	101	2	1.98	0	0.00
1992/93	139	2	1.44	0	0.00
1993/94	188	3	1.60	0	0.00
1994/95	264	5	1.89	0	0.00

Table 6 : CURRICULUM DEVELOPMENT (number of ICPs)

	ERASMUS	CHEMISTRY	%	BIOCHEMISTRY	%
1988/89	80	0	0.00	2	2.50
1989/90	97	2	2.06	0	0.00
1990/91	99	1	1.01	0	0.00
1991/92	122	0	0.00	0	0.00
1992/93	172	1	0.58	0	0.00
1993/94	232	2	0.86	0	0.00
1994/95	201	1	0.50	0	0.00

Table 7 : CHEMISTRY STUDENT MOBILITY IN 1993/94

Sending Country	Number of students			
	1 Trimester	1 Semester	1 Year	Total
B	0	21	1	22
DK	2	2	0	4
D	44	65	59	168
GR	2	10	4	16
E	25	24	28	77
F	130	37	65	232
IRL	9	7	12	28
I	81	21	5	107
L	0	0	5	5
NL	9	6	2	17
P	17	4	0	21
UK	50	31	70	151
A	7	2	4	13
SF	1	1	5	7
IS	0	0	0	0
N	0	0	0	0
S	7	17	0	24
CH	4	0	0	4
Total	388	248	260	896

Conclusions Recommendations

Professeur Jean HUET, École supérieure de chimie de Lyon

Europe has a long tradition in the field of chemistry: teaching, research, industry. Chemistry is the "central science", and has an exponential development: the number of products, the new fields of research — many of them of an interdisciplinary nature — are increasing rapidly. However, the world is changing rapidly too, bringing new problems.

A first change that has occurred in recent years is a change in the nature of the industry. A shift to speciality products requires chemists with a broad knowledge of chemistry and even greater creativity. Moreover, many areas of activity outside the chemical industry require people with chemical training and new opportunities are offered for graduates in chemistry. Some Chemical companies no longer have a national attitude, nor a European attitude, but act as truly multinational and international companies with a preponderance of investments in research and development abroad.

Finally, the image of chemistry: for most of the public, the word "chemical" now elicits antipathy and fear. It is necessary to promote public understanding and appreciation of chemistry and chemists; most people think that new drugs are invented by physicians and have no idea of the role of medicinal chemists in the health enterprise. A solution will help bring the brightest students into the field. It is also important to convince governments and industrial organisations of the need for continued and increased support for chemical education, including fundamental research.

The construction of the European Union, in particular by integrating institutions from Central and Eastern Europe, is a challenge; it is essential to acquire better mutual knowledge of our respective systems in order to facilitate the interchange of students and teachers between universities in the various countries in Europe.

I. Student mobility

Main features of various national systems for education in chemistry in Europe can be summarized as follows:

Undergraduate level :

- There is a high degree of commonality among university undergraduate programmes as regards their content in the "core" areas of chemistry;
- outside the core areas some noticeable differences exist, especially in analytical chemistry and biochemistry;
- all university undergraduate chemistry programmes allow some degree of specialisation during the final phases of study;
- this specialisation is achieved through research project work but also through advanced "option" courses (often a local flavour).

Postgraduate level:

- Most postgraduate research periods are 3-4 years but there are some shorter duration courses (MSc);
- greatest differences arise from the length of tertiary courses, age of duration (24 to 32), research with or without course work;
- most countries give teaching experience.

Several problems are advanced as presenting considerable difficulty in increasing academic mobility in Europe:

- Language barriers;
- different timetables in the academic year;
- different systems of grading;
- different definitions of what is a credit;
- the lack of a book which clearly describes the organisation of teaching and graduation requirements in each country as well as the curriculum in each school;
- a required close link between the training obtained abroad and the curriculum followed at home;
- the difficulty in automatically accepting credits obtained abroad for the validation of the degree followed at home;
- the difficult housing situation for guest students in many places.

Recommendations

a) At the Community level

- The Commission should attempt to coordinate the work of the various bodies concerned with chemistry education at the European level;
- efforts must be made to coordinate the duration of studies in chemistry in the Member States of the European Union. It is also desirable to harmonise PhD programmes between countries; this would facilitate the mobility of doctors;
- all universities within the EU should have the same semester periods;
- programmes to enhance professional experience in other European countries should be offered (parallel to Erasmus);
- after the diploma there should be additional international programmes different from research work in doctoral studies e.g. language (in host countries where later work is envisaged) economics, law and patents, international management, etc.;
- a new working party on "core content of chemistry" should be supported by the Commission;
- language programmes especially to increase the competence in technical language skills;
- student exchanges should be facilitated and encouraged by offering systematic guarantees that credits awarded by a foreign university will be validated as part of the degree in the home institution. In this respect the procedures in the ECTS system have already proved their effectiveness and their implementation is **to be highly recommended**.

b) At Member States level and at university level

Most of the previous recommendations given to the European Community should be carried out at the level of the Member States and universities.

- The image of chemistry could be improved through pre-university teaching.
- Clear and concise information in English of the subjects taught and the curriculum at both undergraduate and graduate level (equivalent of ECTS information package) with modern communication systems (Internet).
- Identical names (in English) for courses in basic chemistry.
- Inclusion in the curricula of non-chemistry elements which increase the competencies for communication, leadership, management, and team work.
- The EU universities should offer optional courses in interdisciplinary subjects such as environmental chemistry, etc.
- No creation of new degree courses without prior consultation and agreement of the profession.
- Introduction of communications systems so that European students can interact in questions concerning the employment market.
- Universities should facilitate exchange by providing adequate housing at reasonable prices.

II. Teaching staff mobility

A number of country reports stated that there are neither strategies nor incentives at the institutional level to encourage academic staff mobility. In most cases mobility for research purposes is recognised and credited and thus provides an incentive for the individual academic to go abroad.

In several cases the main obstacles to academic staff mobility were identified as being financial problems for the institutions and academic problems (i.e. heavy teaching load at home institution and lack of recognition for career) for the individual staff member.

Recommendations

a) At the Community level

- Some kind of "European staff mobility status" has to be created in order to guarantee legal security for institutions sending and receiving staff; the guarantee that fringe benefits, pension rights, seniority rights and similar advantages are not lost because of mobility.
- Intensive courses should be arranged (summer or winter schools).
- All mobility schemes should include a short exploratory visit (e.g. of one week) to the host institution, some time before the actual work abroad is taken up to enable smoother integration at the host institution.
- Grants for mobile academic staff members with families should include possibilities to take them abroad or make visits home; this is important for mobility of a medium-term duration.
- The Commission of the European Communities, as well as national higher education authorities and funding agencies, should create simple and clear application procedures to obtain mobility grants.

b) At Member States level and at university level

Most of the previous recommendations given at European Community level should be carried out at the level of the Member States and universities.

- All academic staff members should be eligible to periods of paid leave (sabbaticals). These sabbaticals should not be restricted to research but also be granted for teaching mobility.
- Just like mobility for research reasons, mobility for teaching

purposes should be recognised by national higher education authorities and/or institutions and count towards promotion and credit in an individual's career profile.

- Academic staff mobility of a medium-term duration must allow for research to be a legitimate component in foreign assignments.
- No academic staff member should suffer disadvantages because of mobility, such as loss of position at the home institution, loss of fringe benefits, pension rights or benefits from the system of social security.
- All institutions hosting staff from abroad should be given help to solve obstacles (accommodation, contact with authorities...).

III. Curriculum development

There are too few curriculum development programmes for several reasons: great diversity of university education, different timetables in the academic year, and difficulties for academic recognition.

Recommendations

- On an experimental basis and for those universities that wish to adhere: begin a course of chemistry (at undergraduate level) which has a curriculum in common with various countries.
- Curriculum development projects should be encouraged; EU chemical education should also be combined with better training in marketing, economics, information technology.

IV. Intensive programmes

The number of intensive programmes has increased during the last few years, but the total is still quite low and usually courses have been directed towards advanced chemistry students and doctoral students.

Main problems: staff mobility; information on all schools not readily available for all students; and recognition.

Recommendations

Organise winter and summer schools at different levels:

- At undergraduate level during the final phases of studies;
- after the diploma as an international additional qualification programme different from research work in doctoral studies e.g. language, culture (in host countries where later work is envisaged) economics, law and patents, international management;
- at postgraduate level.

V. Other measures

It is necessary to ensure coordination between the three chapters in the SOCRATES Programme.

a) *School Education* (Chapter II)

Pre-university education:

- In some countries pre-university foreign language training is insufficient to allow students to make efficient use of mobility: Erasmus students should at least know the language of the country and/or English, the language used to write chemistry papers in the EU;
- in some countries, students reach tertiary level of education with poor training in chemistry in particular and, sciences and mathematics in general. What is clearly needed is a stronger interaction between university professors and their leading counterparts at secondary level.

b) *Horizontal measures* (Chapter III)

- The Commission should attempt to coordinate the work of the various bodies concerned with chemistry education at the European level;
- The Commission should create an accessible database (Internet):
  - — To promote student mobility: information about studies and specialities (equivalent of "ECTS information package");
  - — to promote staff mobility: at regular intervals each department and institution should put together information regarding their willingness to accept foreign academic staff (subject, number, duration), to send their own staff abroad (subject, number, duration) and available grant schemes;
  - — to help students looking for a job: introduce electronic networking so that European students can interact in questions concerning the employment market.

VI. Outlook - European dimension in chemistry

This European dimension will be promoted by organisations which are representative of the whole Community and with the support of the Commission of the European Communities. It is proposed to:

- set up a "European Mobility Scheme";
- establish an "Educational European Chemistry Database";
- propose a greater "European Identity" for chemists in schools targeted towards the secondary level (14/16 years);

- promote chemistry in schools and educate the general public;
- start, after a proper marketing study, a "European Journal" in chemical education or a "newsletter" to be published in existing European national chemical journals;
- contribute to the transfer between Community members of national experiences related to chemical education.

All chemical societies are encouraged to actively facilitate the animation and/or creation of the following bodies; the National Chemical Societies; the European Communities Chemistry Council (E.C.C.C.); the European Chemical Industry Council (C.E.FI.C.); the Federation of European Chemical Societies (F.E.C.S.); and the European Chemical Society.

Recommendations

I. At general level

A) Information

1) Improve the diffusion of information on educational systems with respect to chemistry and specialisations available (data banks accessible by network).

2) Creation of data banks accessible by networks, giving information of employment opportunities for young graduates (in conjunction with industry).

B) Community Programmes

3) Develop intensive programmes (especially during the academic year).

4) Develop programmes including professional experience.

5) Include in programmes, training not directly related to chemistry but which is indispensable for professional chemists.

6) Aid the development of coherent teaching programmes, especially the utilisation of multimedia and electronics; develop European teaching programmes; help to develop chemistry programmes for the use of continuous education, with the same video part for all European countries, but with a different audio part (translation into the appropriate European language). These programmes should help improve public opinion of new technologies as well as be useful for teaching purposes at secondary school level.

7) Develop programmes including teachers at different levels (pre-university and university levels).

C) Member State Level (General recommendations to be made by the Community)

8) Use by all Member States of an academic year divided into semesters and if possible, with similar dates. Similarly, use of a uniform grading system.

9) Solve practical and legislative problems involved with mobility of teachers.

II. Chemistry at community level

10) Help in the creation of journals and electronic journals devoted to:

   a) teaching of chemistry and interdisciplinary fields;

   b) research on subjects of future European interest;

   c) chemistry-related news of importance to develop a real European science market and science community.

11) Coordinate the actions of national societies of chemistry and of chemical industry associations (collection of information, improvements in teaching, proposals etc.).

12) Organise meetings at European level on university programmes for chemistry (content and methods).

13) In conjunction with national societies of chemistry and with chemical industry associations, improve the image of chemistry (secondary education, general public).

Chemistry in Europe: Past achievements and future directions

(23 & 24 March 1995, Lyon)
Professor Jean HUET, École supérieure de chimie industrielle de Lyon, Coordinator of the Erasmus conference, 12 September 1995

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Annex 3
Programme

Thursday 23 March 1995

Morning

Chairperson: Prof. Dr G. WILKE

Max Planck Institut Mulheim (D)

8.30 - 9.00	Welcoming participants
9.00 - 9.15	Formal address: *Prof. Dr G. WILKE*
9.20 - 12.00	Basic principles of various national systems for education in chemistry in Europe
9.20 - 9.35	Undergraduate level and entry requirements
	Speaker: Prof. R.F. KEMPA (UK)
9.35 - 10.15	Discussion
10.15 - 10.35	Break
10.35 - 10.50	Post-graduate level
	Speaker: Prof. J. ROSS (IRL)
10.50 - 11.30	Discussion
11.30 - 12.00	Conclusion
12.00 - 13.45	Lunch

Afternoon

Chairperson: Prof. D. PAPAIOANNOU

University of Patras (Gr)

13.45 - 14.10	Evaluation of the Erasmus programmes of cooperation in chemical education
	Speaker: Prof. J.A. RODRIGUEZ RENUNCIO
	Complutense University Madrid (E)
14.10 - 14.30	Overview of the new needs in chemical education
	Speaker: Prof. ROMAO DIAS - Instituto Superior Técnico de Lisboa (P)
14.30 - 16.15	Workshops 1-2-3
16.15 - 16.30	Break
16.30 - 18.15	Workshops 4-5-6
18.15	Departure for:

Reception and Buffet Supper at the City Hall of Lyon

Friday 24 March 1995

Morning

Chairperson: *Dr I.V. MITCHELL — DG XXII*

Education -— Training and Youth -— European Commission

8.30 - 8.50	European Union Policy on Higher Education: Socrates Progamme *Dr I.V. MITCHELL*
8.45 - 9.30	Discussion
9.30 - 9.50	Measures and activities to be implemented within the framework of the interuniversity cooperation *Speaker: Prof. Dr. W. HERRMANN T.U München (D)*
9.50 - 10.00	Break
10.00 - 10.25	Workshop 1 *Results (5 mn); Discussion (20 mn)*
10.25 - 10.50	Workshop 2
10.50 - 11.15	Workshop 3
11.15 - 11.40	Workshop 4
11.40 - 12.05	Workshop 5
12.05 - 12.30	Workshop 6
12.30	Conclusion — *Mr. Hubert CURIEN* -— President CPE Lyon — President CERN — Former French Minister of Research and Technology.
13.15	Lunch

Workshops

1. Academic recognition in chemical education in Europe (ECTS, Double degree..)
   Prof. J.J. BONNET (F)
2. Chemistry as a core discipline: content and approaches
   Prof. E. B. PEDERSEN (DK)
3. How to influence the perception of chemistry ?
   Prof. D. DONNELY (IRL)
4. Chemistry and employment
   Prof. Tom DIECK (D), Ir. VAN der GRACHT (NL)
5. Mobility of teaching staff
   Prof. J. E. BÄCKVALL (S)
6. The role of national societies of chemistry in promoting chemical education at European level
   Prof. J. B. DONNET (F)

Annex 4
Workshops

Workshop 2

"**Chemistry as a core discipline**" (Professor E. B. PERDERSEN)

Recommendations	University Level	Member State Level	European Commission Level
1. New workshop on core content of chemistry			X
2. Identical names (in English) for courses in basic chemistry		X	X
3. Chemists should teach the chemistry required in other studies	X		
4. Image of chemistry could be improved through pre-university teaching		X	
5. Information system about unique studies and specialities in Europe			X
6. Same semester			X
7. Same grades			X

Workshop 3

"**How to influence the perception of chemistry**" (Professor K. VRIEZE)

The Commission should coordinate efforts to enhance the perception of chemistry in concert with the national chemical societies and the associations of the chemical industry.

a) Together this "group" should collect and analyse actions and efforts at national level.

b) This "group" should then put forward proposals for European, national and institutional levels.

Important issues which one should consider are:

1. Teaching the chemistry teachers in secondary education.

2. Changing the less interesting chemistry teaching syllabuses to more stimulating programmes which increase pupil creativity.

3. Change the current trend of the media to report mostly negative points of chemistry.

4. Teach natural sciences (where chemistry plays a central role), to all university entrants in order to avoid a new generation of urban barbarians.

These proposals cost money, which the Commission should provide for selected actions proposed by the "group".

The Commission should pay particular attention to remuneration of school teachers.

Workshop 4

«Chemistry and Employment» (Professeur T. DIECK)

Recommendations	University Level	Member State Level	European Commission Level
1. Incorporate in the curriculum those non-chemistry elements which increase the competences for communication, leadership, management and teamworking	X		X
2. Quality assurance and management, eco-auditing skills, accreditation and certification should be professional areas of chemists	X		
3. Programmes to enhance professional experience in other European countries should be offered to university students (parallel to Erasmus)			X
4. Introduce communication systems via Internet so that European students can interact on questions of the employment market	X	X	X
5. Urge European chemical industries to adapt long term policies: "Research should stay here!"	EMPLOYERS		

Workshop 5

"**Mobility of Teaching Staff**" (Professor J.E. BÄCKVALL)

Recommendations	University Level	Member State Level	European Commission Level
1. Teaching abroad should give academic credit		X	X
2. Practical problems in connection with mobility should be solved by the host university (accommodation, contact with authorities, etc.)		X	X
3. Teaching abroad should not lead to loss of fringe benefits such as loss of pension rights. Extra salary should be paid	X		
4. Teaching abroad should be combined with research	X		
5. Intensive courses should be arranged: summer and/or winter schools	X	X	X
6. Arrange possibilities for family to accompany	X		X

Workshop 6

"The role of National Societies in Chemical Education" (Professor J.B. DONNET)

Roles identified in discussions in FECS Working Party on Chemical Education:

1. Influence government policy — inform, respond, lobby;
2. Update teachers and lecturers;
3. Mobilise industry — staff exchange, sponsorship;
4. Provide career information;
5. Produce (or commission) resource materials for teachers;
6. Encourage children to study chemistry;
7. Educate the general public;
8. Support research in chemical education;
9. Support initiatives — individual, school, department;
10. Think European — support European activities;
11. Cooperate with other national societies;
12. Facilitate the exchange of ideas and good practice from across Europe in chemical education.

Recommendations

National chemical societies should
(with or without Erasmus or other European programme support);

- Implement a "European Mobility Scheme" (example of the one proposed by the European Physics Society);
- Establish an "educational European chemistry database";
- Propose a greater "European identity" for chemists in schools, targeted at the 14/16 years age group;
- Promote chemistry by all the possible means in schools i.e.:
  - — Video (contribution of chemistry to mankind);
  - — logo;
  - — materials for schools;
  - — prize for good practice, innovation in teaching, etc.
- Start after a proper marketing study, "European Journal and Chemical Education" or a "Newsletter and Chemical Education", to be published in existing European national chemical journals;
- Contribute to the transfer between Community members of national experiences related to chemical education, with the help of Internet;
- Future directions of chemistry in Europe, which is one of the objectives of this meeting, should lead to a European dimension in chemistry (teaching, research...). This European dimension will be promoted by organisations which are representative of the whole Community;
- National chemical societies are encouraged to be active in facilitating the animation and/or creation of such bodies. (E.C.C.C. — F.E.C.S. European Journal of chemistry).

IV

Biology

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Erasmus and Biology

by Charles Susanne, Free University Brussels

Introduction

Erasmus programmes in biology have benefited many students as well as staff members. The added value obtained favours the whole department or faculty of biology, not just those directly involved, since interaction with other EU countries indirectly benefits all students and staff. At staff level, gains are acquired through experience of varied teaching methodology, examination methods, curriculum development, or quality assessment and also through stimulation of research.

Biology has special pedagogical problems, where courses are more time-consuming because they are linked to practical laboratory or field work, to interactive groups or to tutorials. Often a thesis or a placement is also an essential element. Teaching through practical work and theses involves research projects. By their nature, these are costly and this teaching requires additional funding.

For all these reasons, both global and special, it was of interest to quantitatively and qualitatively analyse the biology ICPs, their reports and self-assessments.

1. Quantitative analysis of ICPs in biology

1.1. Number of ICPs

The percentage of ICPs in biology *sensu stricto*, represents 1.28% of the total number of ICPs (Table 1), to which 0.4% can be added in terms of microbiology and biotechnology (Table 2). If an estimate of the number of ICPs in biology including more global ICPs in natural sciences or even science is made, the total becomes 2.2% (Table 3).

This 2.2% represents a proportional decrease from 1989/90 until 1992/93 i.e. the number of ICPs in biology increased more slowly than the total number of ICPs. The same proportional decrease has been observed for the student mobility programme (Table 4), for staff mobility, and for intensive courses. This decrease is even higher for curriculum development (Table 4). This pattern does not correspond to general trends in the Erasmus Programme (Table 5), wherein a slight increase of each category of the Erasmus Programme has been observed. This confirms a tendency towards a deficit of ICPs in biology.

However, biology programmes are rather correctly structured. Indeed, from 1989/90 the frequency of programmes of staff mobility (TS) in biology compared to the total TS is comparable to the frequency of programmes with student mobility (Table 4). For curriculum development, the frequency is even higher between 1990 and 1993 and it is systematically higher for intensive courses.

Comparison of Tables 5 and 6 (presenting respectively the frequency of the different sub-programmes for global activities and for activities in biology) shows that, on the average biology is under-represented in three areas: student mobility, staff mobility, and curriculum development and proportionally over-represented in the intensive programmes.

The total number of institutions participating in approved ICPs has increased steadily from 1988 to 1995; this is very positive as well as the increase in per cent, the average number of institutions in approved ICPs in biology has also increased. These average numbers do not however reflect the large variability in numbers (from 3 to 45 institutions per ICP). In terms of coordination, a large number is represented by the UK, F and NL, there is a deficit at DK, IRL, P and CH level.

In terms of approval, the percentage rate of approval of ICPs increased from 58% in 1988 to 80% and 90% in 1993 and 1994; this is essentially due to the increase in approval of student mobility ICPs from 60% in 1988 to more than 95% in the last few years (Table 7). Compared to the approval ratio on a global level, approval is better for student mobility and intensive courses, while it is lower for staff mobility.

1.2. Approved and achieved student numbers

The average number of students in approved student mobility biology ICPs (SM) has increased continuously; an increase which also can be observed on an institutional level (Table 8).

Within the total number of approved mobility of students, the frequency of students of biology *sensu stricto* represents approximately 1% compared to the 1.28% of ICPs in biology. In terms of microbiology and biotechnology, it represents approximately 0.6% of students compared to 0.4% of ICPs. The estimated total number of students in biology participating in all these ICPs as well as more global ICPs in natural sciences or even general sciences, is 2.0% compared to 2.2% of ICPs.

Related to the proportion of ICPs in biology with student mobility, the frequency of students in biology is higher, at least from the academic year 1991/92 (Table 9). These numbers are encouraging.

Table 1: Number of Erasmus programmes in biology

	Erasmus global activities					Activities in biology					
Year	SM	TS	CD	IP	Total ICPs	SM	TS	CD	IP	Total ICPs	%
1987/88	357	N/A	N/A	N/A	398	N/A	N/A	N/A	N/A	N/A	N/A
1988/89	962	213	80	71	1091	19	3	0	1	22	2.02%
1989/90	1348	272	97	104	1507	21	7	0	4	28	1.86%
1990/91	1592	277	99	114	1748	23	4	0	4	27	1.54%
1991/92	1661	341	122	101	1794	22	3	2	6	27	1.51%
1992/93	1984	418	172	139	2135	21	3	2	8	28	1.31%
1993/94	2217	546	232	188	2379	22	4	1	8	27	1.13%
1994/95	2330	666	201	264	2505	26	6	0	10	32	1.28%

Erasmus subject area code: 13.1 Biology.

– ICP: Inter-university Cooperation Programme. An ICP may comprise one or more of the following activities:
– SM: Student Mobility Programme
– TS: Teaching Staff Mobility Programme
– CD: Curriculum Development Programme
– IP: Intensive Programme

Table 2: Number of Erasmus programmes in microbiology and biotechnology

	Erasmus global activities					Activities in biology					
Year	SM	TS	CD	IP	Total ICPs	SM	TS	CD	IP	Total ICPs	%
1987/88	N/A	N/A	N/A	N/A	398	N/A	N/A	N/A	N/A	N/A	N/A
1988/89	962	213	80	71	1091	0	0	0	0	0	0.00%
1989/90	1348	272	97	104	1507	8	1	1	0	8	0.43%
1990/91	1592	277	99	114	1748	8	2	3	1	9	0.51%
1991/92	1661	341	122	101	1794	6	2	2	0	7	0.39%
1992/93	1984	418	172	139	2135	8	3	2	0	9	0.42%
1993/94	2217	546	232	188	2379	10	3	2	0	10	0.42%
1994/95	2330	666	201	264	2505	10	3	1	1	10	0.40%

Erasmus subject area code: 13.4 Microbiology and biotechnology.

– ICP: Inter-university Cooperation Programme. An ICP may comprise one or more of the following activities:
– SM: Student Mobility Programme
– TS: Teaching Staff Mobility Programme
– CD: Curriculum Development Programme
– IP: Intensive Programme

Table 3:
Estimated numbers of ICPs (biology and related sciences)

	Total ICPs	Biology	or related
1987/88	398	N/A	N/A
1988/89	1091	29	2.7%
1989/90	1507	44	2.9%
1990/91	1748	45	2.6%
1991/92	1794	44	2.5%
1992/93	2135	48	2.2%
1993/94	2379	50	2.1%
1994/95	2505	55	2.2%

Table 4:
ICPs in biology as % of global ICP activity

	SM	TS	CD	IP
1988/89	2.0%	1.4%	-	1.4%
1989/90	2.2%	2.9%	1.0%	3.8%
1990/91	1.9%	2.2%	3.0%	4.4%
1991/92	1.7%	1.5%	3.3%	5.9%
1992/93	1.6%	1.4%	2.3%	5.8%
1993/94	1.4%	1.3%	1.3%	4.3%
1994/95	1.5%	1.4%	0.5%	4.2%

SM: Student Mobility
TS: Teaching Staff Mobility
CD: Curriculum Development
IP: Intensive Programme

Table 5:
Evolution of the Erasmus Programme – global activities

	Total	SM	TS	CD	IP
1987/88	398	89.7%	N/A	N/A	N/A
1988/89	1091	88.2%	19.5%	7.3%	6.5%
1989/90	1507	89.4%	18.0%	6.4%	6.9%
1990/91	1748	91.1%	15.8%	5.7%	6.5%
1991/92	1794	92.6%	17.5%	6.8%	5.6%
1992/93	2135	92.9%	19.6%	8.1%	6.5%
1993/94	2379	93.2%	23.0%	9.8%	7.9%
1994/95	2505	93.0%	26.6%	8.0%	10.5%

SM: Student Mobility
TS: Teaching Staff Mobility
CD: Curriculum Development
IP: Intensive Programme

Table 6:
Evolution of Erasmus activities in biology programmes (in %)

	Total	SM	TS	CD	IP
1988/89	22	86.4	13.6	-	4.5
1989/90	36	80.6	22.2	2.8	11.1
1990/91	36	86.1	16.7	8.3	13.9
1991/92	34	82.3	14.7	11.8	17.6
1992/93	37	78.4	16.2	10.8	21.6
1993/94	37	86.5	18.9	8.1	21.6
1994/95	42	85.7	21.4	2.4	26.2

SM: Student Mobility
TS: Teaching Staff Mobility
CD: Curriculum Development
IP: Intensive Programme

Table 7:
Biology in the Erasmus programme

	SM	TS	CD	IP	Total ICPs
Year	**Requested activities in biology**				
1987/88	N/A	N/A	N/A	N/A	N/A
1988/89	32	15	6	4	38
1989/90	33	14	4	4	38
1990/91	33	12	4	9	40
1991/92	29	15	2	13	38
1992/93	29	11	4	13	37
1993/94	22	9	2	14	29
1994/95	27	13	1	17	39
	Approved activities in biology				
1987/88	N/A	N/A	N/A	N/A	N/A
1988/89	19	3	0	1	22
1989/90	21	7	0	4	28
1990/91	23	4	0	4	27
1991/92	22	3	2	6	27
1992/93	21	3	2	8	28
1993/94	22	4	1	8	27
1994/95	26	6	0	10	32
	Approval rates in biology				
1987/88	N/A	N/A	N/A	N/A	N/A
1988/89	59.38%	20.00%	0.00%	25.00%	57.89%
1989/90	63.64%	50.00%	0.00%	100.00%	73.68%
1990/91	69.70%	33.33%	0.00%	44.44%	67.50%
1991/92	75.86%	20.00%	100.00%	46.15%	71.05%
1992/93	72.41%	27.27%	50.00%	61.54%	75.68%
1993/94	100.00%	44.44%	50.00%	57.14%	93.10%
1994/95	96.30%	46.15%	0.00%	58.82%	82.05%
	Global approval rate				
1993/94	89%	48%	54%	38%	88%
1994/95	88%	55%	41%	46%	87%

The approved number of students also increases from 1988 to 1995, in absolute numbers the highest numbers being observed in UK, F and G, the lowest in B, P and D. These numbers being of course related to the size of the different countries.

The average length of exchanges increased from about 5 to 7 months. For approved students in 1994/1995, the longest stay is observed for A with about 10 months and for G, P and CH with about 8 months, and the shortest for the NL and D with about 6 months. For actual students, during the last year of comparison in 1991/92, the average length is shorter with 0.73 months, the largest discrepancies being observed for GR, IRL, the UK, F and DK (1.47 to 1.02 months).

Concerning the actual mobility, it seems that the take-up rate is a little lower for biology in 1991/92 than the global rate and lower for microbiology. Comparative data is lacking for the last academic years where proportionally, the number of students in biology increased. We would however like to be critical in the use of this take-up rate.

The imposed timing in the preparation of an Erasmus exchange received very negative comments from coordinators, and especially from students. Maiworm *et al.* (1993) give data for a typical timing: application 5 to 8 months before leaving; notification of the grant 3 to 4 months; application is accepted 2 to 4 months before leaving; the exact amount of their grant 1 month before to 1 month after, first payment of grant notified at departure to 2 months after (Table 10). Some of these figures are surprising, for example the way grants are distributed. But, these data also show that the timing required by the Erasmus administration is equally poor: coordinators have to introduce a list of potential mobilities at least 12 months before departure; this list can only be an estimate knowing that students will only apply a semester later. This implies that Socrates would have to modify this timing or, at least, not penalise programmes where the provisional list is not respected: indeed students are really making the decision to apply 6 months before eventual participation, the coordinator however has officially to make a decision one year before but, in reality, at least 1.5 years before, consultations with the students occur in fact 2 academic years prior to the exchange. This system of application favours ICPs with a very limited number of universities where, of course, the estimate will be more accurate. It is unfavorable for large ICPs which were based more on the ECTS system and on openness of recognition of a large number of partners.

A questionnaire, sent to 50 coordinators of different universities participating in student mobility in biology, confirms this problem and the data in Table 10. Table 11 confirms that a large majority of coordinators (80% to 98%) are estimating when they fill in the details, all NGAAs allow changes in mobility and not all NGAAs recommend respecting the initially foreseen exchanges. A large majority (96%) of universities allows for transferal of grants between ICPs of the same institution. Students give their application to the coordinator anytime from one week to one year prior to the exchange, with a majority between January and April; either way, much later than the October deadline.

Table 8:
Average number of students in approved ICPs in biology with student mobility (SM)

	Per ICP	Per institution
1988/89	5.53	1.75
1989/90	14.59	4.27
1990/91	25.65	6.12
1991/92	42.61	7.75
1992/93	50.66 (53.97)*	8.28
1993/94	49.56 (54.25)*	8.64
1994/95	53.97 (60.03)*	9.08

* First number EC countries, between brackets EC+EFTA

Table 10:
Timing of decision concerning an Erasmus exchange
(According to: Maiworm et al. 1993)

Erasmus adminstration	Student experience
(1) May to Sept. year 0: Coordinators are collecting information	
(2) Oct. year 1: List of exchanges for oct. year 2	
	(3) March to May year 1: student applications
	(4) May to July year 1: acceptance of application
	(5) June to July year 1: notification of grants
	(6) Sept. year 1 – Nov. year 2: details of the exact amount of the grant given
(7) Oct. year 2: Beginning of academic year	
	(8) Oct.–Dec. year 2: first payment

Table 9:
Comparison of % of Erasmus biology students with % of Erasmus programmes in biology with student mobility (SM)

	SM	Students
1988/89	2.0%	0.65%
1989/90	2.2%	1.54%
1990/91	1.9%	1.78%
1991/92	1.7%	1.88%
1992/93	1.6%	1.80%
1993/94	1.4%	1.54%
1994/95	1.5%	1.57%

Table 11:
Replies to questionnaire sent to 50 universities participating in biology

ICPs Question 1:
How are you filling in the list of potential mobility asked by the Erasmus bureau?

80%	guess
18%	guess based on previous experiments
2%	advertising in September

Question 2:
Is your NGAA obliging you to keep it to this list?

Changes are possible in all countries, not all NGAA are even recommending to respect the initially foreseen exchanges. A letter sent to NGAA is for instance sufficient in D, N, P & UK. In P, the number of grants is limited to 6 for each ICP whatever the dimension of the ICP would be.

Question 3:
Is your university coordinating the grants from different ICPs and sometimes transfering them between ICPs?

Transfers possible	96%
Principally no, sometimes yes	2%
No	2%

Question 4:
When on average is the student, applying for a mobility?

November–December	22%
January–February	34%
March–April	28%
Later	14%
Other	2% *(from one week to one year before leaving)*

2. Main activities of Erasmus students

On average, an Erasmus exchange in 1990/91 was 6.9 months (Maiworm *et al.*, 1993): 20% were 3 months, 37% were 4 to 6 months, 39% were 7 to 12 months and 4% more than one year.

The exchange was used by 18% of students to complete a thesis (or preparation of a thesis), 21% participated in professional placements organised in the host country, while 10% was in laboratory work. Only rarely was the exchange dedicated to only one of these activities (3% for thesis, 3% for professional placements and 1% for laboratory work.) (Maiworm *et al.*, 1993; Table 12). In comparison with these average exchanges, students in natural sciences followed significantly fewer full time studies and undertook much more laboratory work. The fact that fewer natural sciences students prepared a thesis is surprising: this is in fact compensated by the increase in full time studies with other activities or the increase of combined studies (in natural sciences combinations of thesis and laboratory work are frequent). The questionnaire (Table 13) confirms the importance of practical work in different combinations.

Some of these results are confirmed by the average number of hours per week dedicated to the studies (Table 14), with fewer hours for course work but much more for laboratory work in natural sciences. It is probably the latter which increases the total number of hours dedicated to studies in natural sciences. The fact that less time is dedicated to language courses is also linked to laboratory work where, very often, the student is helped in an international language. Table 15 also confirms this; in relation to the average, proportionally more students of natural sciences do not follow courses with the students of the host university.

Many students (65%) took advantage of Erasmus mobility to follow courses not present in their home curriculum, to work in specialised laboratories (32%) or even to take a new specialisation (21%) (Maiworm *et al.*, 1993) (Table 16).

3. Qualitative analysis of ICPs Biology

From a systematic analysis of the reports of ICPs in biology mentioned in Table 1 and Table 2, as well as other ICPs where biology students are exchanged inside more global ICPs of natural sciences (Table 3), we tried to distill data indicative of the way student mobility was recognised and to understand the academic problems with which coordinators were confronted.

No analysis was made of the comments relating to financial problems, language preparation and housing difficulties (this has been done already in a global analysis by Maiworm *et al.* (1993); see Table 17).

Table 12: Main activities during the Erasmus exchange 1990/91 (in %)

	Total	Natural Sciences	Range
Full time studies	46	18	(63 law; 13 medicine)
Full time studies + prof. placement	10	3	(24 mgt.; 0 geosc.)
Full time studies + thesis	7	1	(11 math; 0 medicine)
Full time st. + other activities	9	29	(29 nat.sc.; 2 education)
Professional placements	3	4	(22 agron.; 0 law)
Thesis	3	4	(12 geo; 1 language)
Laboratory work	1	12	(12 nat.scienc.; 0 law)
Part time studies	5	3	(10 educat.; 0 agron.)
Part time st. + other activities	11	13	(24 econ.; 7 mgt.)
Other combinations	4	14	(17 medic.; 0 language)
Not mentioned	0	1	

(following Maiworm *et al.,* 1993)

Table 13: Work realised by students on exchange (*)

	Average	Range
Only course work, including some	53%	0% in some F, S universities
practicals		10% in some B, F, NL universities
		100% in some F, NL universities
Only laboratory work	30%	0% in Barcelona, not allowed for undergraduates
		10% in some F universities
		100% in some F, G universities
Laboratories + thesis	17%	0% in some F, NL, G universities
		5% in some B universities
		100% in some S universities

(*) From a survey carried out in 50 universities participating in biology ICPs

Table 14: Number of hours per week dedicated to studies

	Total	Sciences Natural	Range
Course work	14.7	8.9	(8.6 agronomy; 11 management)
Laboratory work	4.5	20.0	(0.9 language; 20.0 nat. sciences)
Thesis	3.7	3.4	(2.2 law; 7.1 geo-sciences)
Field work	1.9	1.4	(0.9 mathematics; 5.3 architecture)
Personal studies	8.6	7.2	(5.2 agronomy; 12.9 art)
Language	2.9	1.5	(1.5 natural sciences; 3.9 language)
Other activities	1.2	1.0	(0.5 language; 5.7 agronomy)
Total	37.6	43.5	(34.1 law; 47.5 art)

(following Maiworm *et al.,* 1993)

Table 15: Courses followed with the students of the host university (in %)

	Average	Natural Sciences	Range
All courses	62	54	(37% medicine; 72% law)
Some courses	25	19	(15% agronomy; 37% language)
No courses	13	27	(4% language; 47% agronomy)

(following Maiworm *et al.*, 1993)

Table 16: Activities bringing higher quality to the exchange (in %)

	Global	(following host country)
Different than home courses	65	(52 P, G; 73 I)
Courses with new methodologies	45	(33 E; 56 UK)
Laboratory work with new equipment	32	(15 E; 49 UK)
New specialization	21	(15 GR; 27 B)
Enlargement of university knowledge	44	(30 GR; 59 IRL)
Language courses (host country)	49	(35 NL; 59 P)
Other language courses	24	(5 GR; 38 D)

(following Maiworm *et al.*, 1993)

Table 17: Problems occurring during the exchange in the host country (in %)

	Total	Variation in host country
Housing	22	(13 DK; 37 E)
Financial problems	21	(7 P; 31 E)
Too much contact with students of home country	20	(7 NL; 25 UK)
Credit transfer	18	(11 DK; 23 I)
Administrative problems	18	(3 IRL; 37 I)
Advice on the university programme	14	(4 DK; 28 P)
Differences of methodology	13	(3 GR; 21 I)
Not enough help from the host staff	12	(1 DK; 26 I)
Exams in another language	11	(4 GR; 15 D, I)
Following courses in another language	10	(5 IRL; 24 GR, P)
Courses of too high a level	3	(0 GR; 5 D, DK, F)

(following Maiworm *et al.*, 1993) (Other problems: differences in number of students in classes; difficulties to find a place to study; climate and health; way of life; activities with students of the host country, etc.)

Table 18: Level of recognition. Formal written certification

Question: Please describe for each home institution the formal written certification awarded to students for their studies abroad. Answers:

• double degree, issued by both home and host institutions	10.1%
• joint certificate, issued by both home and host institutions	8.1%
• attestation of study abroad delivered with the degree certificate of the home institution	24.2%
• attestation of study abroad in a transcript of records annexed to, or separate from, the degree certificate	34.3%
• recognition variable in each university of the ICP	19.2%
• problems of recognition	4.0%

At the level of the problems encountered by students during their exchanges and beyond the social and the language problems, 42% of the students had academic study problems of which credit transfer seems the most important, followed by poor advice, differences of methodology and little or lack of help from the host staff.

Too high an academic level of courses seems not to bother the students. This last remark indicates the fact that courses in the EU do not differ too much in quality, it is more the methodology used to teach the same content which changes.

Too rigid a way of admitting equivalencies of credits and bad preparation of the curriculum of students sent on exchange, seems still to be at the origin of some problems.

3.1. Level of recognition

ICP biology reports often mention financial difficulties as well as housing problems, while academic difficulties do not appear very often.

This lack of mentioned academic problems could be interpreted as a very positive sign, however the information is potentially biased by the fact that Erasmus grants are only attributed when recognition is guaranteed. Problems concerning the recognition of studies are, for this reason, difficult to judge, though in some reports, contradictory remarks appear.

Regarding the question, "describe for each home institution the formal written certification awarded to the students for their studies abroad" (Table 18), most ICPs answer that courses followed abroad are certified by a separate certificate, many universities also deliver, within the home diploma, a certification of courses followed abroad. In some cases, different solutions are followed by different universities in the same ICP; an imaginative approach allowing some recognition. Another solution is to deliver a degree with a mention of European study. In some other cases, common diplomas or double diplomas are delivered: in fact in many of these cases the certification is rather a double certificate but not a diploma (see section 3.7). Only 4% of the replies to the questionnaire mention problems such as a too rigid system of equivalencies or, rather surprisingly, an equivalency delivered only for one year of study and not for one semester.

In a questionnaire based on 3263 students, Maiworm *et al.* (1993) showed that these numbers of problems are probably artificially too low: the average level of recognition is 73.9% (Table 19).

Only 56% of the students have had full recognition of their studies abroad, with the lowest recognition in I (44%), GR (45%), UK (47%) and D (51%). Moreover, only 23% of students did not obtain more than 50% recognition, with a maximum in the UK of (44%), GR (34%), IRL (27%), D (26%) and a minimum in DK (10%), B and NL (13%).

The level of recognition in natural sciences is equivalent to the level observed globally (Table 20).

That the way of crediting or of giving equivalencies sometimes gave students problems is clear from Table 21 which shows that only 52% of the students expect to have no prolongation of their studies and 37% expect a full prolongation, a 6 months prolongation for a 6 months exchange. This level of prolongation does not change very much in natural sciences compared to the global level. Only in terms of equivalency are natural sciences better scoring (see Table 20).

If the number of mentioned problems in the analysis is perhaps artificially too low, globally the recognition seems to function correctly although in a differentiated way. The question, "what is the best solution?" must be asked of the way local diplomas are delivered, of the kind of teaching followed in the host university and of the fact that exams have or have not been passed.

Future recommendations are:

a) From the host university:

- a certificate of presence if no exams are passed;
- a certificate of examinations passed (with the grade scale as well as an explanation of the system of grading used by the university).

b) From the home university:

- A normal degree mentioning the list of courses followed abroad.

This seems to be the ideal way, with full recognition through a normal diploma given by the home university without any discrimination with regard to home students. Students would, at the same time, benefit from a "plus" by official recognition of the exchange on the diploma as well as from the supplementary certificate from the host university. From a personal standpoint, if this solution is not accepted and if only a certificate from the host university or a diploma from the home university is delivered, it could be indicative of incomplete recognition.

3.2. Integration of courses followed abroad within the home curriculum

This analysis is biased by the fact that theoretically, only ICPs which credit courses abroad are approved. Coordinators are perhaps not filling the forms correctly.

Regarding the question, "are courses followed abroad credited?" 46% of the ICPs did not answer at all, while 54% answered that all courses were credited with the exception of one, which had 100% credits, but not in all universities.

To, "how did the study abroad period fit into the students overall curriculum in their respective home institutions?" (Table 22) a majority replied that integration and/or crediting is fully implemented, although a number of these answers added terms such as "sometimes" or "in general". The other answers remained more neutral and mentioned the fact that some certificates are delivered or that some complementarity

occured. Theses or professional placements are also often testified. In 4.4% of the cases, double diplomas are mentioned. This is analysed in more detail in section 3.7.

These results show that at least:

- All coordinators are aware and motivated by the problems of integration;
- in a majority of cases integration occurs correctly;
- in many cases biologists are using ICPs for professional placements and/or thesis and/or laboratory work;
- in some ICPs not all partners are following the rules dictated by the ICP itself.

3.3. How are students evaluated abroad? (Table 23 and 24)

In the case of intensive courses, a certificate of attendance or a diploma is always given to students. In the other cases, a certificate of the courses followed with the respective results of examinations is used most of the time (Table 23). Very often, a global certificate giving a global evaluation is used too. In many cases two documents are given; the global examination on the one hand and the certificate of examination results on the other. These documents are sometimes accompanied by information about the way the examinations were done. These double documents are quite normal. It is a little more curious when the coordinator mentions a double document, one with and another without results of examinations: it could be, that one corresponds to course work and the other to laboratory work. The ICP reports indicate practical work may involve different kinds of teaching: problem-solving exercises; sessions in laboratories; project work; group work; field work. Different evaluations are mentioned, anything from a practical examination, to a mini-thesis, written report, or evaluation of the students skills.

On returning to their home universities (Table 24), the situation the students observed most often was that their was a common jury of examinations or double marking on project reports. This corresponds in fact to the examination of a thesis; sometimes only the host university judges the thesis. In other cases, almost the same number of ICP reports mention an evaluation done only at home and a consultation of the host university, eventually attested by a document of global evaluation. Some reports mention that some institutions have difficulties taking into account results of host universities.

There seems to be a contradiction between the majority of ICP reports which indicate a certificate from the host country with mention of examinations results and the rather high number of universities indicating that evaluation is only done at home. It is probably not a contradiction: indeed, the students still depend on their home institution, which delivers the final diploma. Therefore, it is normal procedure for the home university to decide to deliver a degree on the basis of all the results of the student, including the certificate of the host university.

Recommendations could be for the host university, to deliver:

- A global evaluation;
- an attestation for each examination;
- information concerning the comparative level of examinations;

For the home university, the delivery of the final diploma is function of:

- these certificates and their credits;
- an eventual common thesis jury.

3.4. Self-assessment

The answers to questions of self assessment give interesting qualitative data on problems occurring in some ICPs, on positive evolutions and on the expression of new needs. Some interesting remarks are also mentioned in the report with the reply to the question, “what recommendations would you make to improve the functioning of your inter-university cooperation programme at the level of the participating institutions?” Table 25 gives an overview of the answers.

3.4.1. Problems

Problems occur at student level in terms of difficulties of participation of students from the UK, I and IRL, in terms of absence of recognition in some universities or of too rigid behaviour of some departments or even some colleagues.

3.4.2. Positive evolutions

Much more positive aspects are expressed by the self-assessment.

1) In the answers to the three questions asked, aspects of research are mentioned in the majority of cases: the teaching links result very often in better or new research links; in new Ph.D. topics; common Ph.Ds between home and host universities; in students deciding to do (or to continue) their Ph.D. in the host university; in development of postdoctoral research; and on the creation of Human Capital Mobility networks. The creation of a European association and of a European research institute are also mentioned.
2) Possibilities in terms of Ph.Ds: new topics, common Ph.Ds and also the possibilities of creating a European Ph.D. are often mentioned (see also G. Van de Vyver, 1995).
3) Teaching: The most frequent remarks concern the creation of new courses in the home university. In the UK especially, different universities have created degrees with a mixed teaching of biology and of foreign languages. The creation of joint curricula and/or common European diplomas are often envisaged too. Other remarks concern complementarity of studies or possibilities for better evaluation of biology teaching or the stimulation to new teaching and examination methodologies.

Table 19: Recognition of studies in the host university by the home university
(following Maiworm et al., 1993)

	Total	Home country variation
100%	56%	(44% I; 68% NL)
75-99%	10%	(3% UK, IRL; 17% DK,I)
50-74%	11%	(6% UK; 18% I)
25-49%	7%	(4% DK, NL,P; 17% GR)
0-25%	16%	(6% DK; 36% UK)
Total	100%	
Average level of recognition	73.9%	(57.5% UK ; 84.1% DK)

Table 20: Level of recognition *(following Maiworm et al., 1993)*

	Global	Natural sciences	Variation
Recognition	74%	75%	(64% art; 84% medicine)
Equivalency	72%	80%	(65% language; 82% medicine)
No prolongation	54%	52%	(40% law; 63% management)

Table 21: Level of prolongation of studies at the level of the home university (in %)
(following Maiworm et al., 1993)

	Total	Home country variation
No prolongation	52%	(27% D; 84% B)
Less than 50%	4%	(1% UK; 9% I)
50-99%	6%	(1% UK; 16% I)
100%	37%	(10% B; 60% GR)
Total	100%	
Level of prolongation	46.2%	(17.6% B; 75.2% I)

Table 22: Integration of courses followed abroad within the home curriculum

Question: How did the study abroad period fit into the students overall curriculum in their respective home institutions?

Answers:		
Full integration	46.7%	(3.3% sometimes)
Full crediting	17.8%	(5.6% sometimes)
Attestation of thesis and/or prof. placements	11.1%	
Attestations	6.7%	
Complementarity	4.4%	
Double diplomas	4.4%	
No answer	8.9%	

Table 23: The way courses are evaluated abroad (Information from the host institutions)

Question:

On completion of the study abroad period, what type of information is provided by the host institution to the home institution on students achievements? Please select the procedures which occur usually between the various home/host institutions participating in your ICP. Multiple replies are possible.

Answers:

• attestation of intensive courses	6.1%
• general statement of courses attended and overall assessment of the students performance	23.7%
• transcript of records or similar documents containing information on each course which the students have attended but without grades/marks	7.6%
• transcript of records or similar documents containing information on each course which the students have attended including detailed grades/marks	36.7%
• information on the type of examinations/tests which the students have taken	12.2%
• written report of students	1.5%
• unknown	12.2%

Table 24: Role of the home institution

Question:

What was the role of each home institution in the assessment of the students performance abroad (e.g. existence of joint examination boards, etc)?

Answers:

• Common jury	29.5%
• Evaluation only at the home university	26.2%
• Consultation of the host university	21.3%
• Double marking of project study	11.7%
• Evaluation only by the host university	4.9%
• No validation	6.6%

Table 25: New European diplomas (at illustrative level)

- European Master in anthropology and human biology (B 3010): network of 16 universities; one year integrated programme with 300h courses and thesis, under control of a common jury, exchange of at least 3 months.
- European M.Sc. biotechnology (UK 1485): network of 7 universities, stay abroad of 9 months.
- Diplôme européen en Sciences de l'environnement (B 1211): network of 11 universities, integrated programme.
- Diplôme d'études approfondies en modélisation de l'environnement marin (B 1168): integrated programme in a network of 6 universities.
- European Programme in Environmental Sciences and Education: network of 10 universities, joint curriculum.

Soon to be created:

- European Master in environmental technology and management (UK 3123)
- European Programme in environmental management in rural areas (UK 1409)
- European Course on coastal environment (F 3006)
- European Ph.D. in biology (B 1004)

Table 26: Answers to the self assessment questions

– Keys indicate problems; + positive evolutions or new needs

Question 1: Please compare the achievements resulting from your participation to this ICP to the key targets you fixed in your initial application.	
– problems with UK, I and IRL students	17.5%
– too rigid behaviour of some departments/universities	17.5%
– problems in the timing of student applications	11.8%
+ research stimulation	23.5%
+ hope for a European Ph.D.	17.5%
+ wishes of double diploma	11.8%
+ start joint European diploma	11.8%
+ continuation of Ph.D. in the host university	5.9%
+ complementarity of studies	5.9%
+ comparison of environmental problems in the EU	5.9%
Question 2: What impact did this ICP have on your academic life (involvement in other Community programmes in education, training or research, impact on the department – if any – adaptation on your teaching method, adjustment of the content of your courses, etc.)?	
– problems of recognition in UK	4.8%
+ impact on research	46.0%
+ new teaching	17.5%
+ continuation of Ph.D. in host university	17.5%
+ hope for a European Ph.D.	17.5%
+ aid to semestrialisation	14.3%
+ realisation of credit transfer	14.3%
+ incorporation of intensive courses	4.8%
+ creation of a network for Human Capital Mobility	4.8%
+ stimulation of post doctoral programmes	3.2%
+ common Ph.D.	3.2%
+ mixed teaching with European languages in UK	3.2%
+ common field work	1.6%
+ improving teaching methods	1.6%
Question 3: As a participating institution, what three reasons would you stress most in support of your ICPs application for further funding?	
+ stimulation of research	21.4%
+ new teaching methods and/or exam methods	14.3%
+ wish for a European Ph.D.	14.3%
+ stimulation of ECTS	7.9%
+ stimulation of intensive courses	4.8%
+ wishes of double diploma	4.8%
+ stimulation of exchange of professors	4.8%
+ evaluation of teaching	2.4%
+ creation of an European research institute	2.4%
+ creation of a European association	2.4%

4) Others: Other positive remarks concern the environmental sciences: the possibilities of new field work and of comparison of the EU environmental problems.

3.4.3. New needs

1) Many possibilities exist to create **joint curricula or European diplomas** in consortia of universities. Universities are free to organise these but are restrained by national regulations which do not recognise such qualifications.

   The added value is sometimes so high that in practice and use in industry for instance, it is rated far over the value of an official national recognition. An increasing trend of so called "European degrees" is observed, especially from the year 1990/91. This demonstrates a willingness to achieve better integration of curricula, good cooperation in mutual trust and to define special goals Europe can achieve.

2) **A European Ph.D.** (see also G. Van de Vyver, 1995) is often described as a spin-off which would bring an added value to many individual initiatives which are already occurring in ICPs:
   - common Ph.Ds.
   - Ph.Ds. with a long stay abroad
   - common jury
   - presence of foreign colleagues in the jury
   - use of foreign languages

3) **Mixed diplomas:** Possibilities have been created in the UK for biology-language curricula. This example could be followed by other EU countries. However, other possibilities can perhaps be considered: biology with biotechnologies or biology with basic economics for example.

4) **Intensive courses** (see also M. Cherrett, 1995): Intensive courses, if integrated in a curriculum, or even a common diploma are to be stimulated, if credited to the participating students. They can fit in more easily in the time schedule by using winter or summer holidays to bring students and staff together. These wishes are often expressed but, if integrated in a curriculum, intensive courses would become recurrent.

3.5. Staff exchanges

Staff exchanges in biology correspond to short term stays, mostly of one week of intensive teaching, allowing for a diversification of the topics in the host university and for curricula complementarity.

In approximately half of the cases, courses are compulsory for students of B.Sc. level. In one quarter, this is optional and for the rest, compulsory or optional for M.Sc. students. One ICP mentions that courses are recognised in the host university by being called, "Erasmus course in..."

Staff exchanges have the advantage of offering to all students teaching methods from abroad, while staff gain eventual new visions of methodologies, strengths and weaknesses of universities abroad, resulting in course improvements.

Different reports also mention aid that staff exchanges can have in terms of stimulation of research.

Because of the advantages staff exchanges can produce for both the home and host university and for all students including the non-mobile ones, it is recommended that stimulation of staff exchanges be continued in terms of:

- A short intensive course;
- compulsory for B.Scs and/or M.Scs;
- a topic complementing courses of the host university.

This course could be officially recognised in the curriculum of the host university with a title of, "European course in...."

3.6. Distance learning

Distance learning in biology seems to be envisaged by some ICPs (15), of which a large majority are in UK (9) Erasmus programmes. Computerised teaching and distance learning are mentioned but in fact are almost always in programmes (13) where only a wish for the future evolution of these ICPs is expressed.

Other than the UK ICPs, these wishes are mentioned only in a few programmes from NL (3) and B (1): they are also based on possibilities of exchanges through E-mail and video-cassettes.

3.7. Double diploma and European diploma

Six ICPs award two qualifications or two diplomas to students fulfilling studies where a minimal exchange is included. No account was taken of cases where a double certificate is given (certificate of host added to the home diploma), which does not correspond to the spirit of double diplomas. In all these ICPs double diplomas do not involve all partners but only 2 or 3 partners. A report mentions a double diploma between two universities where no students were exchanged (!); another mentions double diplomas although the students were exchanged for 4 months only.

It would probably be necessary for the European Commission to discuss this tendency in more detail and develop some means of regulation. It is possible to understand the advantages some universities see in this system in terms of recognition and surely of added value for the students. However, some universities are strongly opposed to this system, which they feel is not fair: For the same work a student receives two different diplomas. These universities feel it is more honest to deliver only one diploma including a certificate of exchange. This is a debate not discussed in this analysis, but which seems necessary to deal with in the future.

Some European diplomas were developed and function as joint curricula or as integrated programmes (Table 26). Others are in preparation.

4. Conclusions

Above national and regional culture, a new European or even worldwide culture is developing. This is the result of the internationalisation of industry, political integration, very rapid technological development, globalisation of environmental problems, Europeanisation of information sources, etc.

International cooperation in science has been always present, through international organisations for instance. Nowadays, through electronic mail, conversation is sometimes more frequent with foreign colleagues than with colleagues in the same building.

"Recent scientific advances have not only made international cooperation desirable, but they have made it essential. The ocean, the atmosphere, outer space belong not only to one nation or ideology, but to all mankind, and as science carries out its tasks ahead, it must enlist all its own disciplines, all nations prepared for the scientific quest, and all men capable of sympathizing with the scientific impulse" J.F. Kennedy, 100 years US Nat. Acad. Sciences (following F. Press, Preface: International cooperation in Science – A new agenda. In *Worldwide science and technology advice to the highest levels of government*. Ed. by W.T. Golden, Pergamon press, p. 10-12, 1991).

The world is increasingly economically interdependent. Science must also be considered in an international context. In biology, through environmental problems on the one hand and biotechnology on the other, international cooperation is also very real, especially in terms of mega-projects such as the Human Genome project.

Without a doubt, Erasmus contributed to this Europeanisation because it stimulated European cooperation in teaching where, contrary to basic research, cooperation was not necessarily natural. Some ICPs in biology have been very successful at this level.

ICPs in biology increased continuously in number but proportionally a little less rapidly than the global number of ICPs. They remained, however, correctly structured with proportionally the same amount of programmes with staff mobility as for the whole Erasmus project and with a higher frequency of curriculum development and, more significantly, a higher frequency of intensive courses.

Related to the frequency of ICPs in biology with recognised student mobility is the frequency of students in biology participating in mobility which was high at least for the academic year 1991/92.

Some programmes are unilateral: the students of a specific university have the opportunity to study in some other universities, without any reciprocity. Some are bilateral and offer the opportunity of mutual exchanges. Most are multilateral: the students can choose within a larger number of institutions.

Students of natural sciences use the Erasmus exchanges for a large variety of teaching goals, with significantly less course work and much more laboratory work.

Their academic problems remain priority difficulties of credit transfer: the level of recognition reached 75% but with only 56% given full recognition and another 52% of students where the studies were not prolonged.

An ICP is based on mutual trust between participating institutions. It does not mean the programme runs without problems. Even in ECTS, students have reported they still have had some problems of recognition and even some problems related to the length of their studies.

With biology, recognition seems to function correctly although in a variable way. Recommendations for a correct recognition are:

that the **host university delivers**:

- a certificate of presence if no exams were passed;
- a certificate of examinations passed (with results as well as with an explanation of the grading system used by the university).

and the home university:

- a normal degree mentioning the list of courses followed abroad.

This corresponds to the full recognition and even with the added bonus of an attestation of an exchange abroad.

Freedom of movement within the European Union has for a long time been recognised, but is in fact limited by the absence of guidelines regarding academic recognition of academic status and/or the mutual recognition of professional status.

In an initial discussion, it was thought to arrive at an easier system of recognition through reducing the differences in the various European systems of education and in the values of the final degrees. This option has been rejected and replaced with the notion of "integration of variety".

An analysis of the biology ICPs confirms that coordinators are aware and motivated by the problems of integration of courses followed abroad within the home curriculum. A majority of ICPs mention full integration and/or crediting and the use of a certificate of the courses followed with the respective results of examinations and a global evaluation of the student. A common jury for these is often observed too.

A recommendation could be for the host university to deliver:

- a global evaluation;
- an attestation for each examination;
- the information about the comparative level of examinations;

The home university would deliver the final diploma in function of:

- these attestations and their credits;
- an eventual common thesis jury.

At the level of staff exchanges, most occur at B.Sc. level and in a compulsory manner. This seems to be the best solution. Complementarity of fields is very frequent too. An original item could be to announce these courses as being "Erasmus courses in...".

Other than the teaching advantages provided by the Erasmus programmes (better choice of institutions, comparison of methodologies, comparison of qualities, curriculum complementarity, etc.), Erasmus programmes generate synergies at research level. An analysis of the self-assessment forms clearly illustrates this: better and new research, new Ph.D. topics, common Ph.Ds.; development of post doctoral research; creation of Human Capital Mobility networks; etc.

These advantages must not be lost within the more centralised system of Socrates, where a larger input of institutions could result in a lower input of coordinators and surely in less frequent coordination meetings where these kinds of synergies very often crystallise.

Many new needs were expressed in the self assessment responses, mostly in terms of wishes such as:

- Mixed teaching biology – foreign languages;
- mixed teaching biology – economics etc.;
- joint curricula and/or common European diplomas;
- European Ph.D. (see G. Van de Vyver, 1995);
- computerised teaching and distance learning.

These needs should be taken into consideration and can even be stimulated. A large topical network (universitary project of cooperation on topics of common interest) which would work outside student and staff mobility, could be very efficient at this level, playing a role of stimulation, coordination and regulation.

For future exchange programmes, recommandations are:

- A less rigid system of timing for student mobility applications: an analysis of data concerning this timing confirms criticisms often expressed by coordinators and students, a large majority of lists proposed for agreement to the Erasmus administration are almost pure guesses;
- for the host university to deliver an attestation of global evaluation and a certificate for each examination, with the home university delivering the final diploma in function of these attestations and their credits;
- to deliver a normal degree at the home university but mentioning courses followed abroad accompanied by a certificate of examinations passed delivered by the host university;
- to move to theses common to more than one university and to use a common jury system;
- to initiate a system of European Ph.Ds. in biology;
- to include in the new Socrates framework, the possibility of network coordination meetings, or even the imposition of this. This is indispensable for the correct work of the networks but also for the research synergies they can create;
- to maintain staff exchanges for courses which are compulsory and complementary to the rest of the curriculum of the host university;
- to integrate intensive courses in a normal curriculum but to link them to a system of student accreditation;
- to stimulate the new needs of mixed teaching, of joint curricula, of common European diplomas, of European Ph.Ds.;
- to create a large topical network (university cooperation project on topics of common interest), working outside mobility regulation, to coordinate and regulate new needs.

The larger migration of teaching staff and students results in a growing, almost unavoidable, internationalisation of biology studies.

Higher education in biology will be rapidly confronted with larger possibilities of choice of curriculum, where possibilities of crediting courses taken abroad will become important for students and where the European dimension will also be appreciated by industry.

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Biology Evaluation Colloquium

(teaching structure, academic recognition perspectives, new needs, future cooperation, European PhD)

By Charles Susanne, Free University of Brussels

1. Preface

This work is the result of a colloquium held in Toledo (March 31 – April 1, 1995), supported financially by the Task Force Human Resources, Education, Training and Youth (European Union, DG XXII) and organised by the Vrije Universiteit Brussel (VUB) and the Universidad Complutense de Madrid (Vice rector Prof. Guillermo Calleja, Prof. Rafaella Pagani and Prof. Maria Dolores Garralda). It took place under the auspices of the European Association of Deans of the Faculties of Sciences (President: Prof. Henrik Jeppesen).

Its success is due to the activities of the Scientific Committee: Charles Susanne (President, Vrije Universiteit Brussel, B); Friedrich Barth (Universität Wien, A); Gisèle Van De Vijver (Université Libre de Bruxelles, B); Eberhard Müller (Friedrich Schiller Universität Jena, D); Rita Wijndaele (Aarhus Universitet, DK); Xavier Testar (Universidad de Barcelona, E); Michel Volovich (Université de Paris VII, F); Costas Kastritsis (University of Thessaloniki, G); Gian Piero. Sironi (Universita di Milano, I); John Darnell (Trinity College Dublin, IRL); Harald Kryvi (University of Bergen, N); Guus Siebers (Rijksuniversiteit Leiden, NL); Clara Queiroz (Universidade de Lisboa, P); Jaakko Lumme (University of Oulu, SF); Lillemor Lewan (University of Lund, S); Malcolm Cherrett (University College of North Whales, Bangor, UK); Pierre Coërs (Solvay, B). Their national reports were published prior to the colloquium (Susanne, C., 1995). The success is also a result of the approximately 180 participants who were very active in the discussions and in the workshops (all EU countries were represented as well as 11 other European countries). The expertise of Mrs. Mireille Delprat and Mr. Jean-Marc Peltier was also highly valued.

2. Introduction

The meeting at Toledo did not come about by chance, but was rather the result of growing European collaboration in biology, of strong links inside the Scientific Committee and of the invaluable help of a number of colleagues.

Biology faculties have been actively involved in the Erasmus programme from the beginning. Its evolution has been very positive at different levels:

- At teaching level, the growth of a European spirit hasted towards greater understanding of the heterogeneity of the university system. This involves understanding the different means of evaluation of students, transfering credits of students and recognizing the credit transfer of different diplomas and training programmes.
- at scientific level there has been a growing spirit of collaboration, resulting in the creation of many research sub-groups in terms of Human Capital Mobility.
- at a social and human level, essentially through links developing from year to year between coordinators.

The Erasmus programmes succeed thanks to the often thankless and un-noticed dedication of the coordinators, the quality of a programme depending on the quality of their work and on the development of mutual trust. A network is a collective effort.

Work and friendship have stimulated other teacher exchanges and intensive courses have been created on human evolution and ecology, joint curricula in anthropology and human biology and ecotechny have been developed.

However, before 1 January 1995, collaboration in education was not limited to the 12 EC Member States. The EFTA universities already took part in the coordination of exchanges and in research. Some of these countries now have closer ties within the framework of the 15 Nation Europe, and the others can continue teaching and research partnerships.

The Tempus Programme has also allowed for the development of new friendly links with Central and Eastern European countries. A number of fruitful initiatives and successful collaborations have also been established in biology.

In addition an attempt to provide a vision for future action will be made. Biology teaching, like university education in general, is diverse. In order to predict the future, a comparative study of European programmes and an analysis of the past and present are necessary.

3. Past–Present

3.1. ICPs

(presented with the help of Prof. Malcolm Cherrett , Guus Siebers, Gisèle Van de Vijver and John Parnell (see also in this report "Erasmus and Biology")

Through the Erasmus programme, a wealth of experience has already been gained in biological and related sciences (see page IV-3). This experience has to be continued for the benefit of both students and programmes. Those programmes which have been evaluated as satisfactory should be allowed to continue. The personal effort put into previous programmes need not be lost in a highly centralised system. Teichler U. (1990) has already mentioned, "*that the character of study abroad in Europe would change dramatically, if the Erasmus programme did not predominantly stimulate cooperation between departments rather than cooperation between the central levels of universities. In the latter case, we would predict that administrative refinement, the aims of cultural and personality development, "cafeteria"-like credit concepts etc. would gain more popularity at the expense of emphasis on academic goals and curricular integration.*"

3.2. Structure of teaching

(presented with the help of Prof. Rita Wijndaele, Lillemor Lewan and Harald Kryvi)

3.2.1. B.Sc. level

Basic training is rather similar in most European universities. However, access to universities is very varied in the EU; from a totally open system to a selected *numerus clausus* (Table 1).

Our European teaching systems are highly variable, and as a result students have studied biology between 2 and 10 years before entering university, with first year students being from 18-20 years old and the B.Sc. being attained after 2 to 5 years. Moreover, the nomenclature of the degrees is often confusing, sometimes equivocal, even misleading (Table 2). Ph.Ds are attained at between 24 and 30 years of age. The way grading of courses occurs is also highly variable (Susanne Ch., 1995).

The number of hours dedicated to teaching is variable and fluctuates on average from 500 to 900 but is sometimes over 1000 hrs/year. Table 3 is an attempt to illustrate the number of hours of lectures and practicals the student has to attend, how the credit system is organized and which methods of control are used.

An attempt was made to compare the number of hours the students has to "work" during a week, a semester, a year or during the whole period of basic studies. As can be seen from Table 3, this is particularly difficult to compare and as long as the ECTS is not applied in the different EU universities it will remain very difficult to make accurate comparisons.

Basic training at least for the first years of biology is rather similar. However this remains highly variable in terms of the weight given to different methodologies of teaching: lectures; seminars; collective work; interactive work groups; project work; laboratory exercises; field courses; computer work; thesis work.

The rapid increase of biological knowledge implies that differentiation of programmes should be possible. It is however impossible to cover the whole of biology at a specialised level. A choice has to be made. The B.Sc. phase of teaching in EU universities is very diverse as a result not only of each institution's pedagogical decisions but also as a result of human factors related to the presence of a limited number of professors and consequently, of a limited number of specialisations.

Differences between EU universities lead to a great deal of variety in curricula, with many possibilities in terms of:

Table 1:
Access to the 1st year in biology. Is there a numerus clausus? On which criteria is it based? Are there other admittance criteria?

Access criteria		Numerus clausus
A	Matura (Reifeprüfung)	No
B	Lyceum diploma (Certificat de l'enseignement secondaire supérieur; Diploma van secundair onderwijs)	No
D	Abiturprüfung	No
DK	Studentereksamen; Different in each university (Not in all universities)	Yes
E	Lyceum diploma (Bachillerato) +National examination (Pruebo de acceso a la universidad)	Yes
F	Baccalauréat (or equivalent)	No
G	Lyceum diploma (Apopytirio lukeiou) + competitive panhellenic exams	Yes
I	Lyceum diploma (Maturita)	No
IRL	Leaving certificate level grade (paper + maths)	Yes
NL	Secondary school (eindexamen) (chemistry as compulsory course)	No
P	Marks with 30% (10-11th years of school) + 10% (12th year) + 10% (national exam) + 50% (specific examination at university)	Yes
S	Secondary school (Gymnasiekompetens) + acceptance on ground of different criteria for each university	Yes
SF	Notes from high school diploma (Ylioppilastutkintotodistus) + entry examination (less 20% accepted)	Yes
UK	Competitive entry but on individual institutional decisions	Yes

Table 2 : Structure of education in biology in Europe.

	Austria	Belgium	Germany	Denmark	Spain	Finland	France	Greece
Primary (age)	-	6-11	-	7-16	6-12	7-16	6-11	6-12
Secondary (age)	11-18	12-17	-19	17-19	13-18	17-19	12-17	12-18
N° years of biology before university	3-6	2-6	6-9	3-6	8-10	9	6-7	2-4
Under-Graduate	19-23 Magister with thesis	18-19 Candidat 20-21 Licencié with thesis	20-23 Diploma exam	20-22 B.Sc. 23-24 M.Sc.	19-20 21-22 Licenciatura without thesis	20-24 M.Sc.	18-19 20-21 Maîtrise without thesis	18-22 Diploma exam
N° years under-graduate	5 (2+3)	4(2+2)	5(3+2)	3 5(2+3)	4(2+2) or 5	5	4	3-5
Post-graduate	26 Dr. rer. nat.	22-25 (28) Doctor	24-27 Doctor res. nat. 28- Doctor habil.	25-27 Ph.D. 28-37 Dr.Sc.	23-25 Doctorado	30 Ph.D.	22-23 DEA 24-26 Doctorat	26 Doctor
Qualific. required to teach at high-school	Magister + teaching certificate	Licence + aggrégation	Staatsex. +1.5 y. pedagogicum	M.Sc. + pedagogicum	licenciatura+ pedagogia (CAP)	M.Sc. + 1.5 years pedagogicum	CAPES or aggrégation	Diploma

	Ireland	Italy	Norway	Netherlands	Portugal	Sweden	United Kingdom
Primary	5-10	6-10	6-16	4-12	6-11	(6)7-16	5-10
Secondary	11-18	11-13 14-18	17-19	13-19	12-17	17-19	11-18
N° years of biology before university	6	5	6	4-5	6-7	6	7
Under-Graduate	19-22 B.Sc.	19-23 Laurea with thesis	29-21 Cand. mag.	20-23 Doctorat with thesis	18-19 20-21 Licenciatura with thesis	19-23 B.Sc. M.Sc.	19-21(22) B.Sc.
N° years under-graduate	4	5(3+2)	3.5	4(1+3)	5(2+2+1)	3 or 4	3 or 4
Post-graduate	23-24 M.Sc. 25-26 Ph.D.	24-28 Doctorate	22-24 Cand. scient. 27 Dr. scient.	24-27 Doctoraat	23-24(26) Mestrado 30- Doutor	23-27 Ph.D.	22-22 M.Sc. 21-24 Ph.D.
Qualific. required to teach at high-school	B.Sc. + dipl. in education	Laurea + special exam	Cand. mag. + 1 year or cand. scient. or dr. scient.	Doctorat + teacher certificate (1 year)	Licenciatura + incl. 1 year pedagogical training	M.Sc. in teaching (=B.Sc. + 1 year Sch. of Education)	B.Sc. + teacher certificate

- Topic specialisations;
- preparation for a wide range of professions;
- preparation for careers not needing a Ph.D.;
- preparation for research careers and a Ph.D.

This situation has many advantages in terms of internationalisation and complementarity of curricula.

Table 3:
Number of hours of teaching and means of control.

A	Austria	28 weeks 98 weekly hours 1/3 – 2/3 optional	oral/written
B	Belgium	800 hrs = 60 ECTS	oral and written
DK	Denmark	500 - 600 hrs./year	written
D	Germany	110 SWS for 2 years 50% practicals	written and oral final exam, oral
E	Spain	90 credits/year 1 credit = 10 hrs.	written and oral
F	France	DEUG 550 hrs./year	written and oral
G	Greece	Credit unit system: 145 credits for 4 years basic study 1 unit = 1 hr. lect./12 weeks(sem) or = 3 hrs. pract./12 weeks	written and oral
I	Italy	90 hrs./course 6-7 courses/year 500 - 600 hrs./year	oral exam. some written
NL	Netherl.	40 weeks/ 40 hrs./week	written and oral
N	Norway	ECTS 60 credits/year	written and oral
P	Portugal	24-26 hrs./week	written and oral
S	Sweden	40 credits/year 40 weeks a 30 hrs. 1/2 compulsory, 1/2 optional	written
SF	Finland	40 weeks of 40 hrs. max. = 26 hrs. lecture, 32 hrs. pract. ECTS 60 credits/year	written and oral
UK	United Kingdom	max. 4 units of 144 hrs./year	written final exam: oral

3.2.2. M.Sc. level

(see Table 2)
Dilemmas exist between in-depth or broad approaches and between technical specialisation or interdisciplinary studies.

Even at Master's level, a balance must been struck in the mixture of courses on offer; some being highly specialised others more holistic.

Master's degrees are highly variable in EU universities, and this corresponds to the strategic choice of the universities and is often dependant on the kind of specialisms present in each. These master's are usually oriented toward:

- Environmental sciences;
- molecular biology;
- human biology;
- food and technology;
- marine sciences;
- biotechnology;
- ...and so many more.

"Europeanisation" and internationalisation are two (if not the only) ways to guarantee the quality of these highly specialised teaching areas.

In biology, as in many sciences, quality of teaching is linked to the quality of research. This relationship becomes evident in Master's and still more in Ph.D. qualifications.

3.2.3. Ph.D. level

(see Table 2)
Ph.D. teaching is even more specialised, as specialised as the topic of the Ph.D. thesis itself. The requirements for obtaining a Ph.D., (in addition to the thesis itself) vary. In some countries, courses have to be followed or credits have to be accumulated. Most of the universities in the European Union are now organising advanced courses (Table 5). The length of a Ph.D. is highly variable: from 2 to 7 years. In future it will probably be of interest to discuss whether this variability in length influences the quality of the Ph.D. more than at B.Sc. and M.Sc. level. The latter should be at an equivalent level of quality (Susanne Ch., 1995). Therefore, a proposal for a European Ph.D. could be a first step in regulation on a European level.

4. Challenges in biological studies

4.1. Challenges in biology

Biology has become transversal. There is increasing international concern about global changes: degradation of natural resources; reduction of bio-diversity; pollution of air and water; long-term disposal of hazardous wastes; diminution of the ozone layer, etc... Scientific knowledge is intimately related to local and/or global solutions to a healthier environment. Other trans-national issues are linked to biology: health (cancers, cardiovascular diseases, AIDS, etc.), malnutrition and hunger; population growth; biotechnology; gene therapy, etc.

Table 4:
Ph.D. On which criteria is a start of a Ph.D. based? Are those criteria nationally valid or only in each university? What are the other requirements, except for the thesis, to obtain the degree, e.g. optional or compulsary Ph.D. courses to follow?

	Requirements	Courses
A	Mag. rer. natr.	No
B Dutch	Licentiaat	60 credits (fl.)
B French	Licencié (accepted by a supervisor)	No (fr.)
D	Diploma	Not obligatory
DK	Selection by dept. scientific committee	2 years (report + exam)
E	Accepted by a supervisor	32 credits (320 h) in 2 years (9 credits may be from MSc thesis)
F	DEA	Optional – some courses
G	Min. level 7 (very good), language exam, additional courses if diploma not in biology	Depending on university – 140 credits + 3 laboratory projects each for a 3 months period
I	Laurea + national exam	Courses
IRL	B.Sc. (upper second class honours)	No
NL	Defined by each department	Defined by each dept.
N	Magister	One year course
P	Licenciatura (>16/20) Nostrado (very good)	No
S	M.Sc.	One year course
SF	M.Sc. (at least good) Grant: excellent	40 weeks – specialised studies
UK	Individual univ decisions (1 or 2 class degree)	Yes – dependent on each university

In the biological sciences, universities need to adapt if they want to maintain their traditional vocations and relevance to society in the 21st century. The knowledge and know-how of universities will be essential in the many societal challenges that need to be faced.

Knowledge of biology has broadened and deepened significantly in the last decade and especially over the last few years: advances in life sciences, not only in biology but also in the collateral agricultural and medical sciences has never been greater. This has resulted in an increased specialisation of different curricula not only at Ph.D. and Masters level but also at B.Sc. level. This evolution can be considered as a normal development of biological sciences, it is however related to different challenges:

a) At a general level

- Teaching should not only be a source of information but an opportunity to coach students in the process of learning by themselves;
- new concepts must be incorporated into biology curricula, although biological studies imply keeping to a broad scientific base;
- new discoveries imply a tendency for polarisation between molecular biology, the ecological sciences and organism biology, although a biologist has to understand the whole of biology to master his research;
- the increase in specialisation is so great that no single university is today able to cover the whole range of biology. This implies that collaboration and networking is now a necessity and will become ever more so.

b) Other challenges are of an industrial, ethical, educational and even political origin:

- *Industrial*, because more and more biologists are attracted by biotechnological concepts and their business consequences;
- *ethical*, because biologists are implicated in bioethical discussions and have to explain the limits and/or the dangers of some techniques;
- *political*, because the general public is increasingly aware of the biosphere's deterioration and the potentially catastrophic effects of different pollutants causing acid rain, a thinning of the ozone layer and global warming. Biologists have the responsibility to motivate and formulate long-term policies;
- *educational*, because to develop a basic understanding of the philosophy of bioethics, new biotechnological developments or current ecological problems, a biological culture must be developed in the general public.

4.2. Industrial and technological challenges

The driving force behind biology is human curiosity, a deeply rooted desire to understand nature and to control it. If these

different research areas sometimes create wealth, so much the better. Only high quality and diversified biological research can develop a platform of strategic discovery.

In biology–technology, transfers between higher education and the bio-industry (biotechnology) sectors are becoming very important to economic prosperity on a national level, especially when such industries are very much knowledge-based. Unless industry wants to depend on non-European licenses, then it is of strategic importance that they master basic biology research. The post 1968 syndrome of mistrust between universities and industry has disappeared, collaboration is now possible and has a growing recognition.

More than in other sciences, advances in biology and in related technology have been very rapid and are influencing many business activities. Biology can today contribute to the economic, social and cultural development of the European Union.

The 21st century could be the century of biology as society becomes increasingly technological. If this is to be the case then the industrial sector and business in general need to become biologically literate to remain competitive. Education in basic biology, developing a global biological culture and literacy are perhaps the most important "technology transfers" between universities and industry.

Certainly, the public's doubts and questions are an important factor in the decision-making processes. The importance of social acceptance is considerable in its influence on political channels, and in the success of applications.

4.3. Ecological challenges

As environmental studies evolve from the local biotope to the planetary level, this global level is perceived more and more under the term, "global village". Environmental damage has been stressed by the Earth Summit at Rio de Janeiro in June 1992 (air, water and soil pollution; deforestation; thinning of the ozone layer; acid rain; reduction of bio-diversity; global warming; etc.). To reduce these sources of damage, to promote global development and to ensure sustainability (agenda 21) the conference identified the importance of a biological culture and the biological education of the general public. The input of biologists in vital problem areas such as population growth, food and health will also become essential. Biologists will need to add pedagogy and problem solving to their curriculum training and play an increased role in teaching, industry and official administration.

A new consciousness and ethic has to be created for the decision-making framework on future resources, on the rights of future generations and on the awareness of human responsibilities. Ecological concerns are of course not new, however the end of the 20th century is a period of public and collective awareness of the biosphere's fragility. Important decisions have to be taken, they can only occur democratically by educating the whole population so that people have a choice. We all have some knowledge (we are all instructed analphabetics), but find it difficult to steer a correct course between information and sensationalism.

This awareness implies that teaching programmes are needed at different levels:

- Specialised programmes dedicated to technical problems such as water, sea, air, waste, bio-diversity, etc.;
- global programmes dedicated to the holistic approach;
- programme of continuous education;
- programme of education for specific professions: from industry to administration; from research to management.

4.4. Professional challenges

The variety of professions for biologists is very high: ranging from teaching basic biology in secondary and high schools; teaching and research or research only at university level; research in industry, pharmacy, animal production and agriculture; advisory functions in many kinds of institutions; applied research in health care and in hospitals, clinical technicians, public health and health education; environmental research or consultants; conservation of natural resources and their utilisation; and pollution control.

Adequately trained biologists are vital for this variety of jobs. This not only means basic high-quality training, but interdisciplinary teaching and simultaneously, the possibility of specialising in modern techniques. All these aspects of training are needed for research, applied or fundamental, and for any jobs, industrial or public.

There is also a long-term challenge to be answered: solving the irrefutable problems of disregard for basic research; of undermining the appeal of scientific disciplines; of loss of morale in underfunded universities. All these factors lead to a manpower crisis for applied research and to subsequent adverse effects in high-technology industries.

"*Nations will become increasingly dependent, not only on the quality of their leading innovators and engineers, but on the specialised skills and adaptability of their work forces. Skills are in much shorter supply than venture capital. Their scarcity may be the true limit of growth.*" (Connerade, 1990)

"*Basic science is fundamental to the process of finding new ideas and knowledge that can form the background upon which applied science will be able to continue developing. With no basic research, applied science will slowly die.*" (Jeppesen, 1993)

Whilst not losing academic coherence answers should be given to other challenges to the biology curricula:

- New topics must be included but must not result in a poor understanding of the whole curriculum;
- freedom of thought must be encouraged but with the ability to plan;
- preparation for a future career must be achieved but related to existing technology;
- scientific relevance must be retained but also language competence and communication skills enhanced.

Moreover, to maintain this professional competence, each university has to continuously adapt their curricula, to propose new masters' courses and to propose means of recycling. Each biologist will have the responsibility to follow a continuous training programme to maintain high-quality knowledge and to keep in touch with the universities and the scientific community.

4.5. Biology as a culture

The cultural dimension of basic research is best summed up by visionary comments such as:

- "*Basic sciences are a necessity for the well-being of our societies as well as of applied sciences, nations neglecting their scientists risk decadence"* (King Albert I, 1927).
- "*It pumps the lifeblood of ideas and inventiveness not only into the technological laboratories and factories, but into every cultural activity of our time. The case for generous support for pure and fundamental science is as simple as that*". (Weisskopf, 1965).
- "*It affects the whole intellectual life of a nation by determining its way of thinking and the standards by which actions and intellectual production are judged....*" (Weisskopf, 1965).

Universities globally have an important cultural role to play, especially in biology. Biology is no longer a fundamental science just consisting of the analysis of animal and plant organisms, nor is it simply research with industrial applications, it now has commercial and ethical implications. Dangers are involved in the practical use of biotechnology, research must also occur into these possible negative effects, as well as into the social and ethical dimensions. The performance of research must still occur in freedom but not in an uncontrolled manner. The high reputation of biology will only be guaranteed if the public is correctly informed of both the positive and negative side effects of research, so avoiding the chance of sensationalism and panic.

Due to its social and environmental influence, biology is becoming a matter of discussion, where the debate requires a good knowledge of biology by the general public. Where political decisions and laws are to be supported by scientific arguments and not by philosophical manipulations, democracy can only be attained by objectivity and in this case by a basic biological education.

In biology, the ambition must be not only to promote research as a cultural tool, but also to alter the public perception of biology.

The role of the media is as crucial in presenting biology as in any other matter; their primary responsibility being to their audiences. Information must be accurate, understandable, interesting and nicely presented but must avoid any sensationalism.

4.6. Quality assessment

Quality assessment must become a normal part of our language in terms of university teaching. It is legitimate to expect universities to prove their ability to offer quality programmes which meet:

- The aspirations of the students;
- the changing employment situation;
- changes in society itself.

Therefore, quality assessment is now considered a normal part of the university environment although it is more often concerned with the evaluation of scientific qualities than with teaching methods and the programme organisation (Table 5).

The quality concept is difficult to define because it is only considered useful in certain areas and depends on point of view of the subject:

- Students, with a variety of needs and abilities;
- staff;
- authorities of the university institution;
- industry;
- governments and financial control;
- society, benefits and relevance.

One major factor is the crisis in university finance, linked and/or reinforced by a doctrinal crisis putting the utility of education in doubt. If university teaching is expensive, bad teaching is still more expensive, although the relationship between money saving and quality of teaching is a complex one. If the principles of quality control are largely accepted, and one agrees that more students need not imply a decrease in quality, then there should be no more "secret gardens" or "ivory tower". If questions such as "what are you doing?" and, "how" are dealt with as part of budget restriction decisions, it is feared that quality assessment would be used outside the context of programme management improvement and be linked instead to political decisions with budgetary consequences.

There is the increasing fear of the familiar litany, "do it with more students, with more quality but with less money".

Quality assessment is not a tool for classifying universities. The variability of biological subdisciplines implies that each university has its own speciality and whilst universities often have some areas of excellence it is impossible to have excellence in all subdisciplines. To classify institutions in terms of excellence would be an almost impossible task, as heterogeneity is the rule.

Today, higher education institutions are often receptive to the debate on quality of teaching and quality improvement and discuss ways of defining quality assessment. Departments and faculties of biology are following in this same spirit.

4.7. Continuous education

The balance between teaching and research existing within each university is affected by the necessity for continuous education. Continuous education is more than retraining, it is also a second learning opportunity important for democracy. This necessity is more than teaching sponsored by firms or associations, it has to cope with changes in technology, the social environment and even culture. Society is becoming global and needs long-term decisions for sustainable development.

Continuing education in biology is becoming a necessity because of the rapid changes in biological knowledge and techniques and the demands for continuous retraining in different professions. It is also influenced by more general factors such as social change and democratic requirements. In biology the use of a credit system will help adult education.

Universities have to become centres of permanent actualisation of knowledge. Many universities are already offering courses aimed at continuous education, they are often of a mixed type aimed for cultural purposes at a wider public, sometimes they offer education subsidised by large companies. This continuous education is characterised by greater flexibility than in the "classical system" of organisation and by its adaptability to requirements and needs.

"*At the postgraduate level, the universities have to adapt their offer to the needs of the changing socio-economical environment in a flexible and fast way. The continuous education scheme, taken in a wide sense (adults university, updating, retraining...) may play an important part in this regard, since it favours a direct contact between the socio-economic world and the academia. So the universities have to extend their offer to their own graduates throughout their professional life.*" (Testar X., 1995).

5. The future

5.1. ECTS

(workshop 1: under the direction of Prof. Clara Queiroz and Jaakko Lumme)

The recognition of studies and diplomas is a prerequisite for the creation of an Open European Area of education and training where students can move without obstacles. That is why the European Course Credit Transfer System (ECTS) was developed in a pilot scheme within the Erasmus programme and is now moving from its restricted pilot stage towards a much wider use as an element of the European dimension in higher education.

Table 5:
General control. Is there a system of evaluation of staff? Which one? National or only valid for your university? Is there a system of quality management in higher education?

	At course level	For staff
A	No, new law will require it	No, new law will require it
B	No in the Walloon part; yes in Flanders in collaboration with the Netherlands	In some universities only, when promotion has to occur, judgement by students
D	No, advice through 'Verband Deutsche Biologen'	By students in some regions
DK	From 1992 by a centre of Evaluation with visiting committees	No real staff evaluation but course evaluation
E	No	Teaching: self-evaluation + student questionnaire ; Research: national evaluation
F	National evaluation committee (by institution and subject)	No
G	No	In some universities only, through student's view
I	No	Only report of scientific activities
IRL	No, under consideration	Yes, by students
NL	Yes, nationally (with visiting committees)	Yes, within department
P	No	Yes, through a national law (Estatuto da Carreira Docente Universitaria)
S	Initiatives of some universities only	Yes, by students
SF	At experimental level, Natural sc. were evaluated the 3 last years	No real system of evaluation, but control of students
UK	By university, each 3 years; nationally every 5 years (Higher Education Quality Council)	Yes, at university and at national level

(see also Van Vught *et al.*, 1993).

ECTS is designed to facilitate the transparency of equivalence of studies between universities. The implementation of ECTS on a larger scale will strengthen and increase student mobility, in particular at the undergraduate level.

Obviously ECTS is not only a tool for transparency of equivalence but also, because comparisons are obligatory, for the promotion of quality. Many biology departments and faculties are ready to join the ECTS system, although they will have particular problems to solve because topics in biology are highly variable. For instance, how to compare the credits of totally different topics or universities with very different B.Sc. curricula?

In fact, for all universities participating in Erasmus programmes, at least in the successful programmes, accrediting is already functioning informally. Eventually it will occur via recognition between institutions of the equivalence of trimesters, semesters or years spent abroad.

5.2. Needs of quality assessment in biology

(workshop 2: presented by Dr. Vroeijenstein, The Netherlands, under the direction of Prof. Eberhard Müller and Gian Piero Sironi)

Article 126 of the Treaty of the European Union states that cooperation is meant to promote quality, but quality assessment is also desirable because quality assurance is a tool to promote cooperation.

One of the essential remarks about quality assessment is that every faculty should define its goals and aims in terms of knowledge, skills and attitudes, towards present and future needs. These goals would be very clear and transparent.

Quality assessment is meant to verify the achievement of these goals and aims. In other words, is a faculty doing what it promised to do?

The main purpose of quality assessment should be to improve the quality of education. It should also try to avoid the ranking of universities or faculties, which has been happening to some extent up to now. It should also avoid the uniformisation of curricula. It should not be directed to decisions concerning funding, mainly because this would heavily influence the outcome of the quality assessment.

What are the methods to implement the assessment: internal and external assessments?

Internal assessment is an assessment performed by the faculty within the faculty. There are established procedures and protocols for this purpose, which consider many different aspects. A European Union pilot project exists that indicates guidelines.

Within internal assessment, two essential components have been emphasised. Primarily, internal assessment would monitor what is going on in the faculty. Secondly, it should include student evaluation, through a questionnaire to be filled in by the students, at the end of the courses and at the end of the curriculum. This questionnaire should be designed with student participation and should be anonymous.

Internal assessment has positive effects: a faculty is obliged to produce figures and data, and to hold a mirror up to what it is doing. The results should be made available to students and they should see an effect following these results.

External assessment should be done by peer reviewers and should occur by means of a visit of the faculty by a committee. The components of this committee have been discussed: it should include members indicated by the faculty according to certain criteria; inclusion of one member from potential employers and from professional bodies should be considered. It should also include one foreign member knowing the local language. This assessment should lead to a report.

It has been pointed out that Socrates might help in circulating information on methods used throughout Europe and to disseminate the practice of quality assessment. A thematic network of biology might also have a role to this purpose and it might consider the possibility of an international review.

5.3. Networking as a vehicle for professional development.

(workshop 3: under the direction of Prof. Costas Kastritsis, Xavier Testar and Friedrich Barth)

After having exchanged information on the situation in several European countries there seems to be no question that something has to be done to improve professional development in biology. One of several reasons for the bad situation is that it is increasingly difficult to define what a biologist is and what he does. The diversification in modern biology is enormous, ranging from biophilosophy to bioengineering.

It is important to distinguish between education and training. Whereas education may well remain open and diversified from university to university, training in professional skills needs some identical basic level everywhere. Accordingly, professional qualification should be coordinated across Europe. In this regard, changes of the biology curriculum will have to be considered which will be shortened and leave room for aspects of applied biology. Purely professional training would however, remain in professional schools.

It is felt that internationalisation of training periods at a European level would be very valuable as well as intensification of training periods in general. This is important with regard to both the students' training and the opportunities provided for his or her self-assessment and avoiding the wrong choice of studies.

The majority of the workshop participants agree that the education and training of secondary school teachers should be subject specialisation within biology. Although this is already the case in some countries, it is not in others, e.g. Greece. In addition, teacher mobility is considered to be an important issue. All these aspects apply to both original and continued education.

Continued education is underdeveloped in many countries. It should be incorporated into a future thematic network for all three groups concerned here: students; staff; and professionals.

A thematic network for biology should be established with the ultimate purpose of acting as a central body, the different sections of which should be involved in developing solutions to the above-mentioned problems. The network should secure the collaboration and involvement of professionals from industry, hospitals, environmental agencies, etc.

5.4. European Ph.D.

(workshop 4: under the direction of Prof. Michel Volovitch and Gisèle Van de Vijver)

In Biology, Ph.D. degrees are highly specialised. Ph.D. teaching being so specialised, europeanisation seems the only way to guarantee its quality. There would be an advantage in creating an equivalent level Ph.D. in Europe.

Therefore, a European Ph.D. proposal could be the first step towards uniformity. Sooner or later, students and employers will question the value of different EU Ph.Ds. or even which is the best Ph.D.?

Of course, it is very important to remember that the European Ph. D. will never replace the national diploma delivered by the universities. However the European label is and will be an important bonus.

In fact, the creation of a European Ph.D. is no longer a new initiative, since in many States, several universities have already decided to deliver a European Ph.D. on the basis of a minimum, but well defined, criteria. Their attitude confirms the importance of such a label.

The main point of the discussion will consist of formalising such use and to define minimal attribution criteria which could be admitted and followed in the near future by all EU universities.

From the discussion, it appeared necessary to clearly distinguish between doctoral studies on the one hand and the attribution of the final Ph.D. degree on the other. It was important, at the beginning of the discussion, to restate that the awarding of the Ph.D. degree would remain entirely under the responsibility of each individual university (possibly within the rules as defined in each Member State).

It was clear that, given differences based on established traditions, no uniformity was predictable, and probably not desirable. However, though different in many important aspects (e.g. the inclusion of formal teaching), doctoral studies also exhibit strong similarities and already include a great deal of "europeanisation". The question was asked whether it would be beneficial to recognise, through common procedures, that some Ph.D. theses are prepared in a truly European context. This could have taken the form of a "European label" awarded to defined Ph.Ds, without interfering with the principal responsibility taken on by the universities themselves.

6. Conclusion: Thematic network in biology (University cooperation project on topics of common interest)

An agreement has been reached to commence this kind of collaboration in biology with the following goals:

- To propose a place for transversal meetings within one discipline and favouring meetings above and/or between the topical subdisciplines (see 4.1);
- to stimulate a European dimension in biology (for instance in terms of the range of European habitats, of environmental problems without barriers, etc.) (see 4.3);
- to stimulate a European dimension in the curricula (see 3.2.1 and 3.2.3.):
  - — Joint curricula and diplomas;
  - — modular courses transferable on a European scale;
  - — promoting European diplomas and curriculum development;
- promoting European Ph.D. in biology (or a means of regulation) (see 3.2.3 and 5.4);
- to promote quality assessment studies (or propose referees) (see 4.6 and 5.2);
- to promote complementarity (see 5.3):
  - — of teaching in subdisciplines;
  - — of research areas;
- to stimulate better education and training of secondary school teachers in biology (see 5.3);
- to promote ECTS in biology on a European basis (see 5.1);
- to propose a core curriculum and a code of good practice;
- to promote continued education in biology and public education (see 4.2, 4.5, 4.7 and 5.3);
- to develop new orientations (see 4.4) and innovative pedagogical approaches;
- to promote geopolitical "cohesion";
- to think about the future of biology.

The network should secure the collaboration and involvement of professionals from industry, hospitals, environmental agencies, etc. This network will have the support of the CRE (European Conference of Rectors) the EADS (European Association of Deans of Faculties of Sciences) and the ECBA.

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Annex

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V

Physics Studies for tomorrow's Europe

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Erasmus Evaluation Report

Prepared for the European Evaluation Conference held at the Aula, University of Ghent, Belgium
April 7 & 8, 1995 – A. Lybaert, T. Schelfaut & H. Ferdinande – Universiteit Gent B-9000 Gent, België

1. Preface

This report attempts to sketch an outline of the Erasmus activity that occurred during the academic year 1993/94 in the field of physics. It is based on the "statements of activities and expenditures" of more than 40 physics ICP contracts that took place last year.

The report consists of three main parts:

1. An overview of the most frequent answers and remarks to the topics in the statements, filled out by all programme coordinators.
2. A number of charts depicting the mobility flows and pick-up ratios in a graphical format, accompanied by their interpretations and the formulas used to obtain the data.
3. The appendix listing tables that served as the basis for the charts

2. List of abbreviations and terms used in this document

Student flow: All students, regardless of duration moving from one home institution to one host institution.

Pick-up ratio: The ratio of the mobility that actually took place over the proposed mobility; Usually a distinction is made between an Erasmus pick-up ratio and an overall pick-up ratio, denoted by ALL, which also includes the mobility that was funded without an Erasmus grant.

SM: Student Mobility.

TS: Teaching Staff mobility.

IP: Intensive Programme.

CD: Curriculum Development programme.

ICP: Inter-university Cooperation Programme.

3. ICP Statements

This section covers the answers and remarks that appear most frequently in the summary reports filled out by the programme coordinators. It is arranged in the same sections found on the forms filled out by every coordinator.

3.1 Report on the approved activities

3.1.1 Student Mobility

3.1.1.1 Academic content

Most students enrol in part of the regular physics curriculum (3rd, 4th or 5th yr.). For most students, this implies lectures and laboratory work, but some students undertook major projects in research laboratories.

Erasmus students' workloads usually vary from 75% to 100% of the regular workload at the home institution to allow for cultural integration and language training.

3.1.1.2 Achievements

Only a few ICPs did not achieve their objectives. Due to improved understanding of academic differences, a better cooperation between participants is made possible. Most participants expect future expansion; further development of cross links between participants is also anticipated.

3.1.1.3 Curriculum integration

Courses at the host institution were chosen so as to fit as well as possible into the student's academic background, and with the requirements of both home and host institutions. Usually, the programme of each student is approved individually, following discussions between home and host institutions. Due to the excellent apprehension of mutual curricula, it is possible, for each student, to design a programme that fits in well with the home curriculum. The overall criterion here is that the exchange period shall enrich the student's background in physics. Since the content of physics is international, this did not present major problems; although styles of teaching and the degree of experimental training vary considerably between institutions, students generally benefited from the experience.

Aside from the language courses, the physics courses taken by the students are estimated to be at the same level as the

courses they would normally follow at their home institution. Therefore, students usually took the standard examinations along with the native students. The student's performance in the host institutions is often taken fully into account for assessment and credit purposes at the home institution.

3.1.1.4 Linguistic preparation

Linguistic preparation is generally not required due to the wide acceptance of English in the field of physics. Erasmus contributes to better proficiency in English and French. Only limited linguistic preparation is necessary to enhance social integration in the host country. Most students enrol in intensive language courses prior to their departure. Often they are offered special training in the language of the host country during their exchange period, but only few take advantage of this possibility. For UK students, intensive language preparation starts 2 years before the actual period abroad takes place. Also of great necessity, are additional courses provided by the host institutions. Specific foreign language physics tutorials are greatly appreciated.

3.1.1.5 Accommodation

Each participating institution has established accommodation procedures, which efficiently arrange accommodation for Erasmus students. Most reserve rooms in university residences, provided that the application is made at least 3 months in advance. However, later in the year some students prefer to move off-campus and seek private accommodation. Sometimes privately rented flats are retained for use by the next flow of exchange students. In large cities such as Paris, it is almost impossible for students to find a cheap residence in privately owned houses;

3.1.1.6 Assessment

The host institution often provides either a general statement of courses attended and an assessment of the students' performance, or a transcript of records with or without grades or marks. Also possible is information on the type of examinations the students have taken.

Usually, host and home institutions agree that the host university reports the student's results, relating to the performance of the rest of the class (e.g. a class average grade and the student's rank). The home institution then uses this as input to a translation process, aided by previous discussions at an ICP meeting concerning marking practices and average mark distribution.

3.1.1.7 Recognition

3.1.1.7.1 Certification

Usually the host institution delivers a separate attestation mentioning the study period abroad, together with a transcript of all the courses followed during the exchange period. Such certificates then supplement the regular diploma the student is awarded at his or her home university. Joint certificates or double degrees are less likely to be issued. UK universities offer their students special study programmes that include one year at another European university. This is usually called, "physics with study abroad".

3.1.1.7.2 Academic difficulties

German students appear to have more problems in having their home institution recognise the equivalence of the courses followed abroad.

Sometimes the results of the exchange students are reported too late, so that the students experience problems in trying to enrol in a next year at their home university.

3.1.2 Teaching staff mobility

Last year, only 7 ICP contracts included a teaching staff mobility component. Usually these exchanges involve specialised staff who can hardly be missed at the home university. Moreover, the amount of the grants awarded does not permit the home institution to hire a replacement. This means that, as a consequence teaching staff exchange programmes are generally more restricted in time than their student counterparts. The usual duration of teacher exchange programmes is one to two weeks. Another compelling reason for this limitation is the fact that teaching staff members usually have more family commitments, and are therefore less mobile than students.

The contents of most teaching staff exchange programmes often comprises specialised seminars in the particular field of physics the staff member is specialised in.

Some of the participating universities also offer students from neighbouring, non participating, institutions the opportunity to follow the Erasmus courses on their premises .

3.1.3 Curriculum development programme

Only one ICP, coordinated by an Irish university, covered a curriculum development programme. This programme involved a course at Masters (M. Sc.) level and comprised three components:

- A core of 6 to 10 credit modules;
- an elective of 2 to 10 credit modules;
- a 40 credit M. Sc. project.

The core of the programme was available at only one site (Brussels), while the electives and project were undertaken at the student's home university.

The M. Sc. degree was validated by the Brussels institution to avoid major difficulties in the reconciliation of the different structures.

3.1.4 Intensive Programme

Here too, only one ICP included an intensive programme. The programme is coordinated by the Katholieke Universiteit Leuven (KUL, Belgium) and concerns a replacement for an

existing course, "Capita Selecta in Nuclear Solid State Physics". At the Aarhus University (DK), the only other participant, the programme constitutes a complement to an existing course.

3.2 Report on the management of the programme

3.2.1 Administrative management

- Administrative time required for Erasmus is at the expense of research;
- E-mail is considered beneficial in maintaining contact between participating institutions;
- October 31 as a limit for returning reports and filing renewal applications is inappropriate, since October is already a very busy month for the academic community. November would be better;
- some coordinators complain about the considerable administrative overheads involved.

3.2.2 Financial management

The amounts of the grants is barely sufficient to cover the costs of corollary meetings and linguistic preparation. Participating institutions bear much of the costs on their central funds.

Minimal grants are at devoted to linguistic preparation and social integration of students.

3.3 Recommendations on Erasmus

Contrary to previous sections, where a mere overview of the answers given by the programme coordinators to the various questions is made, it appears more opportune in the following paragraphs to simply catalogue all the different remarks and recommendations made.

3.3.1 Recommendations to improve the ICP

- Most partners would like to see at least one meeting between different coordinators;
- Austrian students prefer exchanges of three months. Therefore it should be possible to accept late demands and organise faster placements of students;
- some partners ask for the installation of so called 'Erasmus Cells' at each Erasmus-university and encourage direct contact between all these cells. These cells reduce the administrative load of coordinators.
- the combination of teaching staff and student mobility is very efficient in Ph.D.-type programmes;
- most partners feel unhappy with the present application procedure for Erasmus grants but appreciate the flexibility that most Erasmus Agencies show when asked to modify the destination inside the network. This flexibility should be generalised for all National Agencies;
- there should be a better mutual knowledge of participants;
- the universities should provide more information on courses which can be offered in English and about possible theses;
- formal agreements on academic recognition are difficult to reach. The same goes for the assurance that a proper attestation will be issued by the host institution. Standard models proposed by Erasmus might help coordinators significantly;
- why not use the European Credits Transfer System (ECTS), although it is still inadequate and more comparison work is needed;
- more attention should be paid to the difference in the needs of exchange students, depending on the host country;
- closer degree of personal supervision for visiting students is considered beneficial, especially during early weeks;
- mainly UK students have language problems. This can easily be solved by introducing long-term planning which enables a two-year language preparation at the home university. Though this is difficult since the student doesn't know whether or not he or she will get a grant.

3.3.2 Recommendations regarding the distribution of grants

- The grant should be better adapted to the local expenses of the student. At least part of the renting costs should be paid by Erasmus if these costs exceed more than one third of the total grant. It does not make sense to send off a large number of students with small grants instead of less students with sufficient grants;
- the functioning of the NGAA is not obvious. If a partner does not receive grants, it is impossible to find out whether there was a problem at the level of Erasmus, at the NGAA, or at his/her own university. The money should go as directly as possible from Brussels to the ICP;
- some partners insist that more and longer student grants should be awarded;
- some partners feel that the limitation by which a student can only obtain an Erasmus grant once should be removed;
- the Commission ought to exert pressure on the national governments in order to give further juridical support to their universities in such a way that they may enlarge the field of applicability of recognition procedures and that they may recognise diplomas awarded within an ICP network;
- coordinators whose ICP was not renewed, should be informed at the same time as coordinators whose ICP has been renewed. The result of the application for Erasmus grants should be communicated to the coordinators in March;
- procedures vary widely from country to country. Therefore a more uniform approach would be desirable;
- the students should receive part of their grant to handle preliminaries;

- some coordinators prefer to handle money personally.

3.3.3 Recommendations regarding the administrative procedures

- Earlier notification of approval and later filing of reports, e.g. the end of November;
- the administrative procedures of the Erasmus programme could be simplified by using electronic mail, e.g. forms could be much easier filled in electronically, than by the present system of typing, or at least by putting the forms on floppy disks;
- the form should have more multiple choice questions: easier to fill in and easier to compare;
- some more information on the programme should be mailed (or E-mailed) to the students;
- some partners would like to be allowed to choose the language in which they communicate with the Erasmus Bureau, in order to avoid unnecessary translation work;
- some partners would like to see more flexibility to introduce new partners, e.g. 3 months instead of 1 year;
- not all partners are very happy with the use of the ECU. It would be preferable to pay students in the currency of their host country. Spanish and Italian students in particular loose out significantly when changing;
- the requirement of working with annual budgets presents real difficulties and a 3 to 5 year budget would be favoured. It should be possible to carry over to the next year unused parts of the funds. Why not introduce the possibility to fund excess numbers in one ICP from money available from a shortfall in the number of students in another ICP?

Conclusion: There is a general demand for higher grants, faster replies to applications and more flexibility!

4. Figures and Graphs

4.1 Introduction

In this section, a number of charts are presented that provide a clear picture of statistics such as total mobility and pick-up ratios. Most graphs are related to the student mobility programme, as this is the most frequent type of cooperation between universities. Some of the graphs, however, deal with teaching staff mobility, but the relatively small share of this type of cooperation severely limits the relevance of the statistics. Since curriculum development programmes and intensive programmes are rather exceptional (only one last year) no statistics regarding CD or IP are included in this report.

All graphs and charts are generated from tables listed as appendices.

Based on these tables, it is possible to define several different pick-up ratios, all of which have a slightly different meaning. This will be explained in more detail at the time these pick-up ratios are defined.

4.2 Student mobility

In total, 41 ICP contracts included student mobility. The number of students involved in these flows varies from one ICP to another and ranges from about 5 to sometimes more than 50 students. Most of these exchanges span one or two semesters and were generally included in one of the final years of the student's curriculum.

4.2.1 Totals

A first series of graphs and charts show absolute numbers relating to student mobility programmes. In practice, this spans all but one ICP. This last ICP is a Belgium-coordinated programme which encompasses only teaching staff mobility.

4.2.1.1 ICP contracts per country

Figure 1 simply gives an idea of the number of ICP contracts that are coordinated by each country, and the number of times each country is represented in the list of participants of an ICP. Whenever more than one institution of the same country participated in a given contract, this ICP was still counted only once in the number of ICPs a country participates in.

In total there were 41 ICP contracts that included student mobility during the academic year 1993/94. Of these programmes, 10 (24%) were coordinated by French universities, 8 (19%) were British and 6 (15%) programmes originated in Belgium. The four countries that participated most in student mobility contracts were France (in 33 of the 41 contracts), Germany (29), the United Kingdom (27) and Italy (20). Germany and Italy in particular, profile themselves in that they participate in far more contracts than they coordinate.

Figure 1: ICP contracts per country

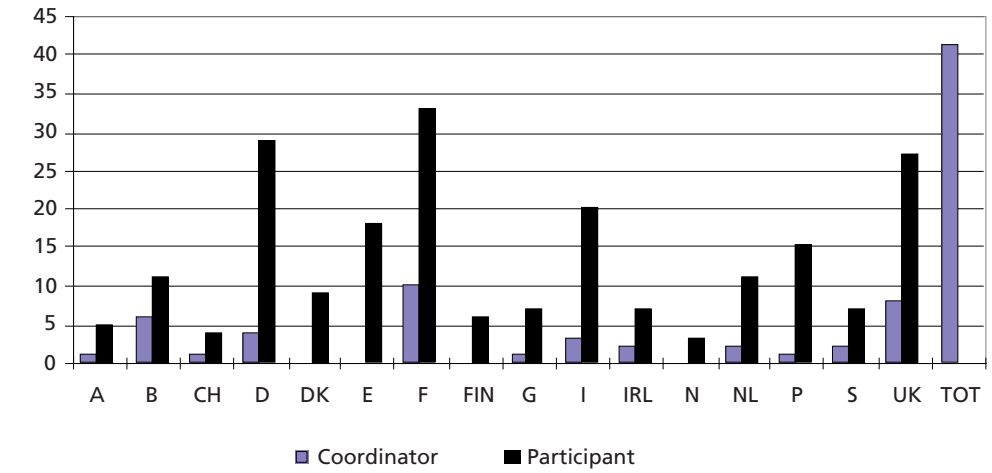


Figure 2: Actual SM per country

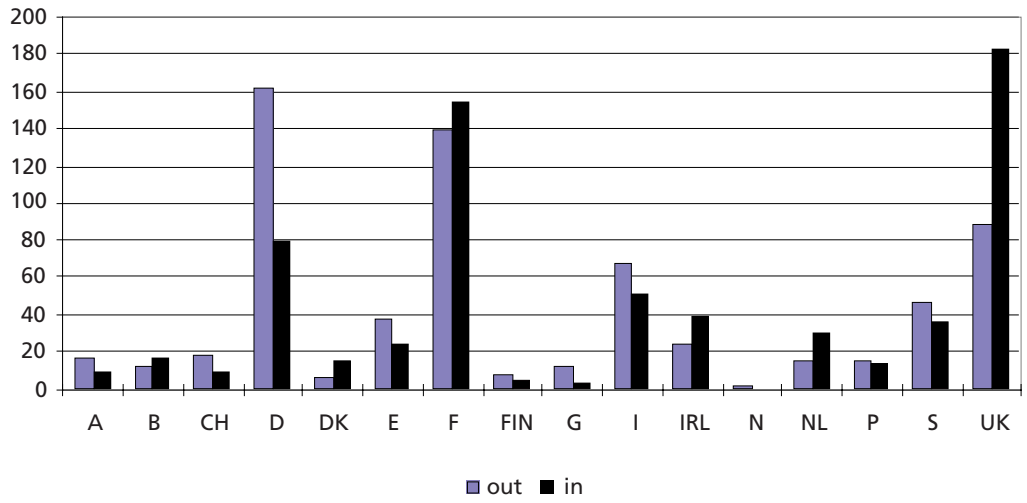


Figure 3: Proposed SM per country

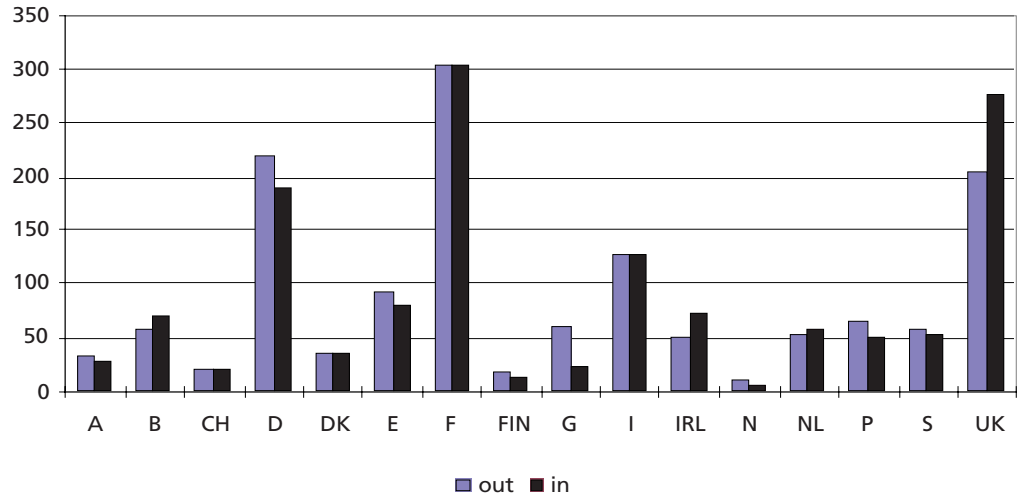


Figure 4: Total actual SM per country (Erasmus and non Erasmus)

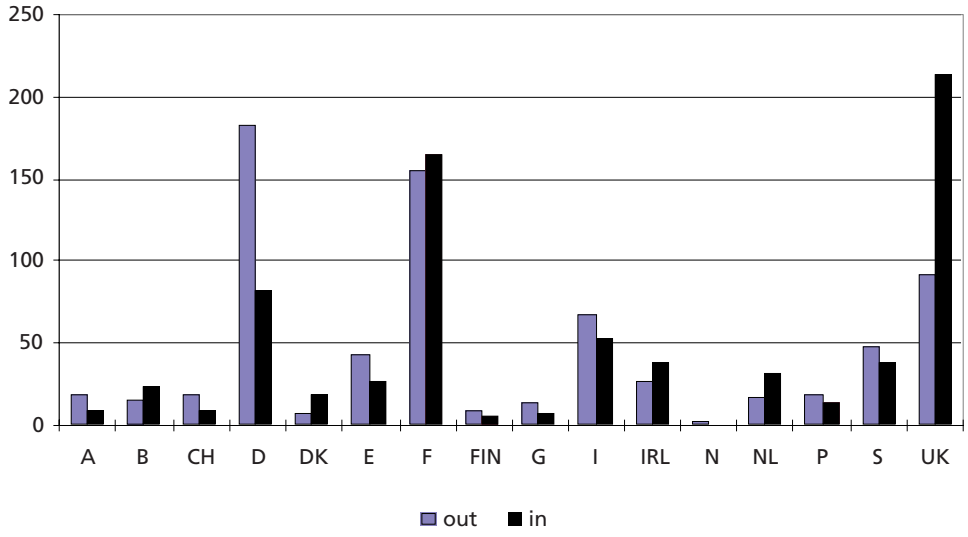


Figure 5: Average of pick-up rates per coordinating country

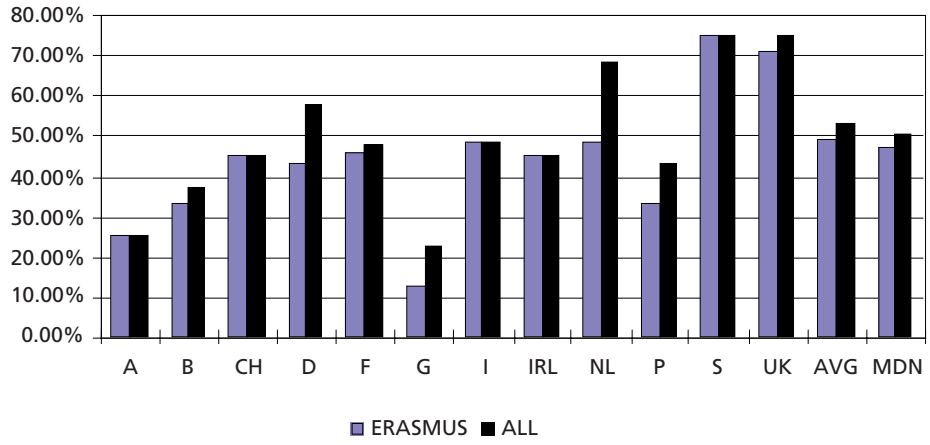
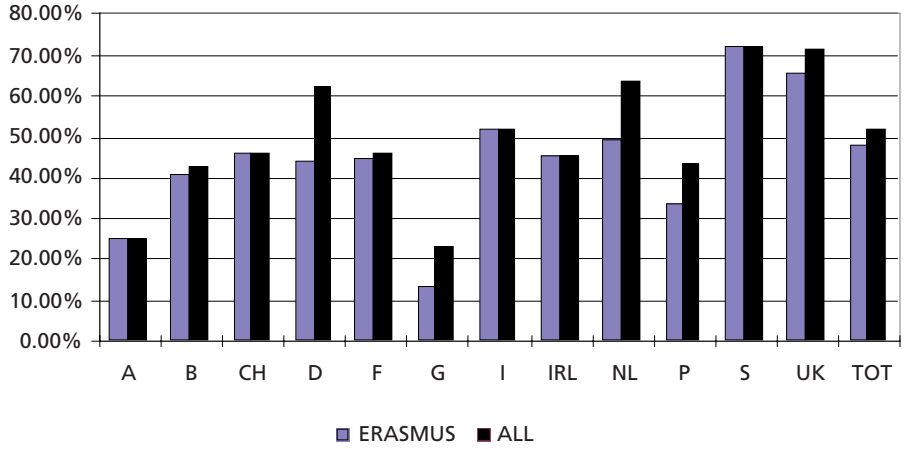


Figure 6: Total pick-up rate per country



4.2.1.2 Incoming an outgoing SM per country

The next three Figures distinguish between incoming and outgoing student mobility for each country involved in the ERASMUS programme.

These charts are based on a table that lists all participating countries on two perpendicular axes. The table then shows the number of times each country played the role of home country (horizontally, appendix 1) for mobility to another country, and the number of times an institution of that country served as host for student mobility originating in any other country (vertically).

Such tables were actually generated for every ICP separately, and afterwards all these tables were consolidated to yield the ones listed in appendix 1.

A distinction is also made between actual mobility, proposed mobility and total actual mobility. The latter indicating that some of the student mobility was funded other than by means of an ERASMUS grant. Actual mobility only includes flows funded with ERASMUS grants. Total actual includes all.

In these charts, "out" indicates outgoing student flows, i.e. the number of times a country served as home country, while "in" denotes the incoming mobility, thus the number of times the country played the role of host country.

Not surprisingly, the same countries that were involved most in mobility contracts (France, Germany and the United Kingdom as shown in Figure 1) also play a major role in the above three graphs. It also becomes evident that even though Germany and Italy show a great imbalance in the ratio of contracts they coordinate to the contracts they participate in, both countries make up on that when it comes to the ratio of proposed incoming to proposed outgoing mobility. This too is not surprising generally speaking, since proposed incoming and outgoing mobility are almost perfectly matched in all ICP contracts.

4.2.2 Pick-up ratios

Next come a number of statistics that can all be described as different types of pick-up ratios. Generally speaking, a pick-up ratio indicates the number of exchanges that actually took place divided by the number of exchanges for which a grant was awarded. However, it is possible to define several such ratios, all of which slightly differ from one another and thus have a slightly different interpretation.

4.2.2.1 Average pick-up ratio per country

The figures shown in this chart (Fig 5.) were obtained by first calculating the individual pick-up ratio of every single student mobility contract. These contracts were then grouped by coordinating country and, for every country the average pick-up ratio is defined as the average of the pick-up ratios of all ICPs coordinated by that country. Obviously, only those countries that play a coordinating role in at least one contract are listed.

Also included in the chart are the global average pick-up ratio (avg) and the median pick-up ratio (MDN). These average and median pick-up ratios are based on all the 41 student mobility contracts.

An interesting interpretation can be given to these pick-up ratios as they provide a means to compare the efficiency of an ICP contract, in terms of its pick-up ratio, to all other contracts coordinated by the same country, or to the average or median pick-up ratio of all ICPs together.

These pick-up ratios are of course interesting in themselves, as they give an idea of the overall efficiency of all physics student mobility contracts.

4.2.2.2 Total pick-up ratio per country

To calculate the pick-up ratios in Figure 6 the sums of the actual, total actual and proposed student mobilities are taken for all ICPs coordinated by a country. The ratio of actual over proposed mobility then gives the ERASMUS pick-up ratio for that country, and the ALL pick-up ratio is obtained in a similar way. The TOT pick-up ratio is defined as the total actual mobility (662) divided by proposed mobility (1395) and thus equals 47.5 %.

As for interpretation, these pick-up ratios serve a similar purpose as the average pick-up ratios, but have the advantage that the effects of ICP contracts with an extreme pick-up ratio are diminished. These figures can also be useful for comparison of different countries with one another. The TOT number is an excellent tool for comparing ERASMUS projects with other exchange programmes such as TEMPUS.

4.2.2.3 Outgoing pick-up ratio per country

These pick-up ratios have the advantage that they are defined not only for those countries that actually coordinate one or more ICPs but also for every participating country.

The numbers listed in this chart (Fig. 7) are obtained from the table in appendix 1 mentioned earlier. For every country, this table shows total incoming and outgoing student mobilities, where a distinction is made between actual, total actual and proposed mobility. Of the two, the numbers for outgoing mobility are the ones in which a country is more actively involved.

The pick-up ratios in this chart are then calculated as the ratio of the total outgoing actual student mobility divided by the total outgoing proposed mobility for each country.

One reason why these figures could be useful is to sort out the countries where excessive funds are spent per exchange student. For example, the Norwegian budget per student was about ten times the amount originally planned, since only ten per cent of the proposed exchanges actually took place. Based on a similar argument, the budget spent per student was about double the amount originally planned.

4.3 Teaching staff mobility

The remaining four charts are related to teaching staff mobility. Except for one ICP coordinated by a Belgian university, all

Figure 7: Outgoing pick-up rate per country
Erasmus grants only

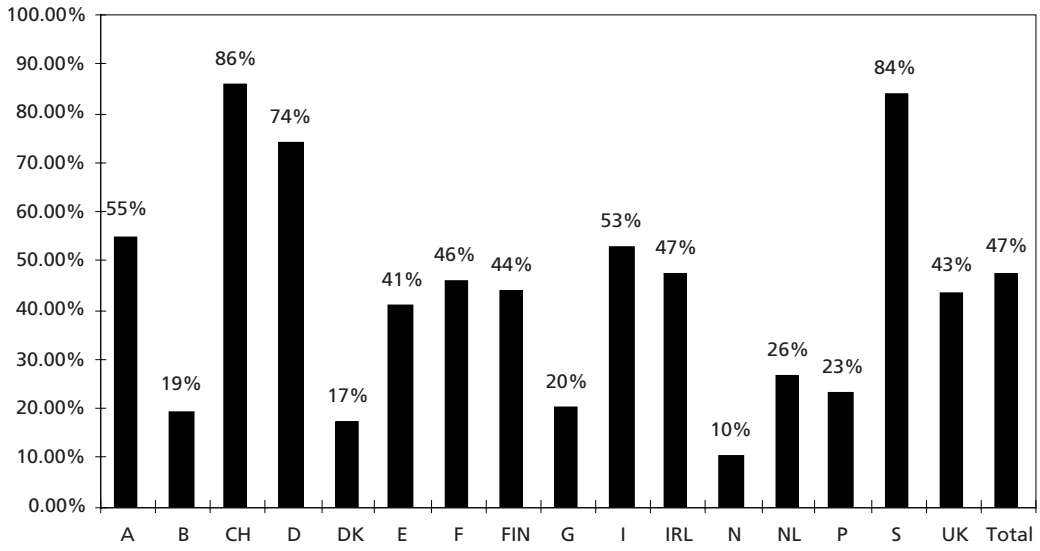


Figure 8: Actual teaching staff mobility per country

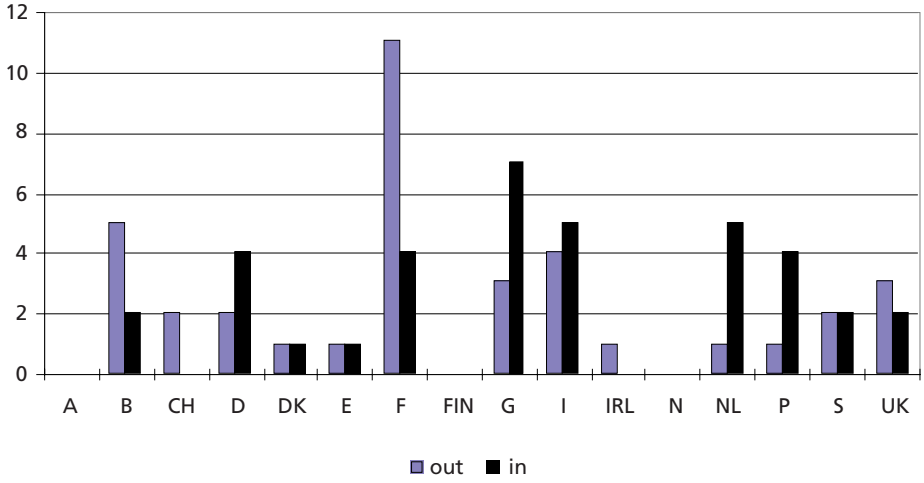
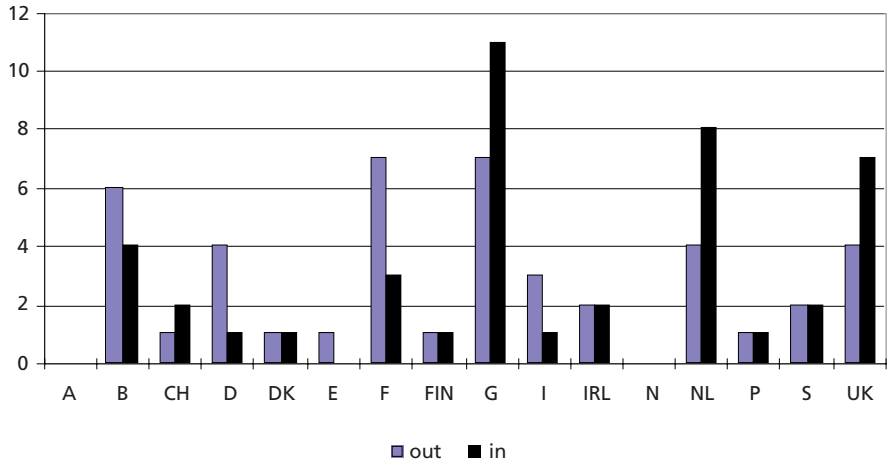


Figure 9: Proposed teaching staff mobility per country



contracts that include teaching staff mobility also have a student mobility component that is usually more significant than the teaching staff part of the contract. For most contracts, the distinction between actual and proposed mobility was rather vague, so it was useless to calculate average or total pick-up ratios for teaching staff mobility in the sense of Figures 5 and 6 for student mobility. Another reason for this omission is that there are only very few ICPs incorporating a teaching staff component and thus, statistically speaking, it would make little sense.

4.3.1 Totals

Listed first are three graphs (Figs. 8, 9, 10) that compare incoming and outgoing mobilities per country, much in the same way as did Figures 3, 4 and 5 for student mobility contracts.

It should be noted that only 5 of the 7 ICPs that include teaching staff mobility are included in the data. The other 2 ICPs were incomplete, in that it was not clear from where to where the flows were directed. The total actual teaching staff mobility is therefore higher than what can be derived from these graphs; 9 more teachers were actually exchanged during the academic year.

4.3.2 Teaching staff mobility pick-up ratio

Though of questionable statistical significance, this last chart (Fig. 11) shows the outgoing teaching staff mobility pick-up ratio per participating country. These figures are obtained in a similar way as the pick-up ratios in Figure 7 for student mobility. The only difference is that here the total actual mobility is used, instead of restricting to Erasmus funded flows.

Figure 10: Total actual teaching staff mobility per country

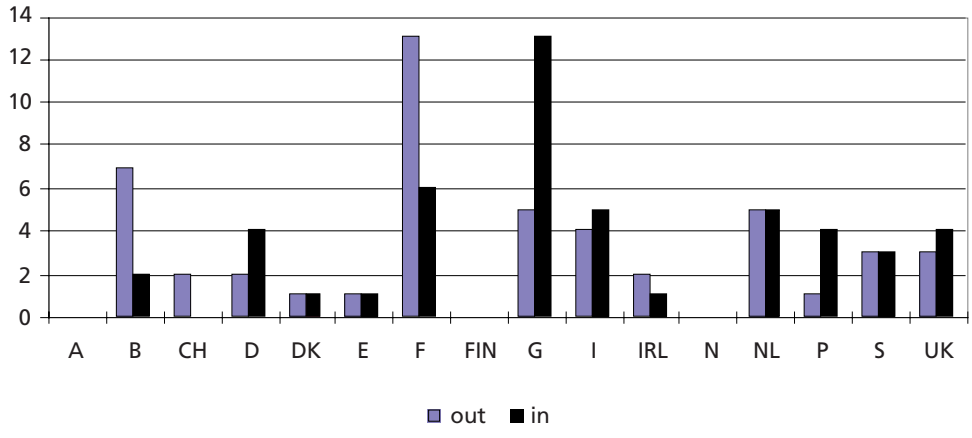
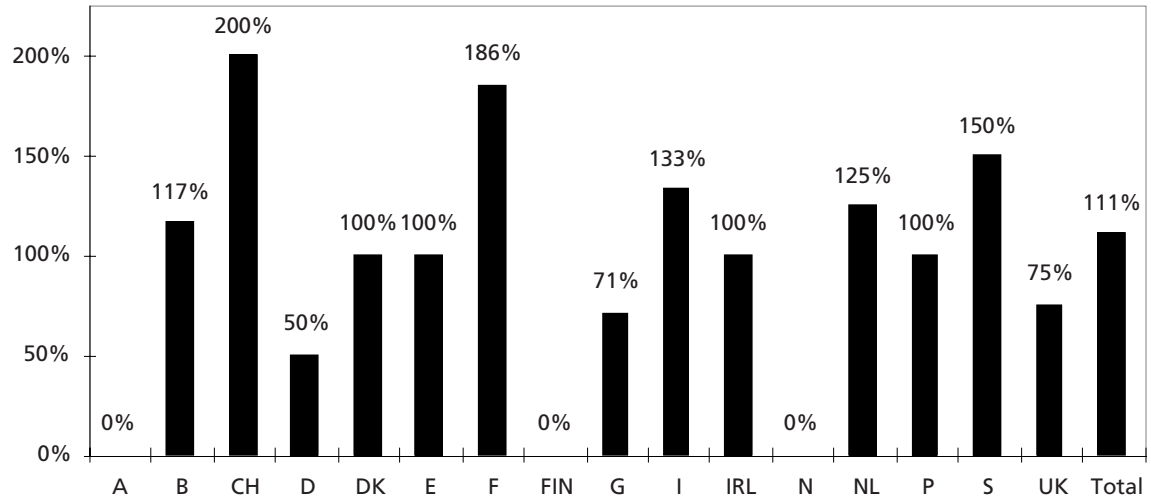


Figure 11: TS mobility pick-up rate per country



5. Appendices

The charts in this report are all based on a number of tables incorporating all relevant data. For the sake of completeness these table are also included in this evaluation, together with a short explanation of what represents what.

Appendix 1: Actual student mobility

from \ to	A	B	CH	D	DK	E	F	FIN	G	I	IRL	N	NL	P	S	UK	Total
A							6			3	3					5	17
B	2						4	1		1	1		2				11
CH							7				5			1		5	18
D	4	4	5		9	8	28	1		18	6		5	4	14	55	161
DK		3		2												1	6
E		2		6			11	1		2	1		2		3	9	37
F	2	1		19		9			3	9	7		1	3	10	74	138
FIN		2	1	2	1											1	7
G		2			1		4	1					2			2	12
I			1	8	4		23	1			5		8		1	16	67
IRL		2		8		3	2			3			2		1	3	24
N											1						1
NL	1		1	2			4			1				2	3		14
P		1	1	2			8			2						1	15
S				13		2	6				8		7			10	46
UK				17		2	50			11	1			3	4		88
Tot.	9	17	9	79	15	24	153	5	3	50	38	0	29	13	36	182	**662**

This table shows incoming and outgoing student flows per country. The total flows per country are split up in their components per other country. The difference between actual and total actual flows consists of the existence of non-Erasmus funded mobility. These tables are really a consolidation of similar tables, individually created for each ICP.

Appendix 2: Proposed student mobility

from \ to	A	B	CH	D	DK	E	F	FIN	G	I	IRL	N	NL	P	S	UK	Total
A		3		7	3		7			4			3	2		2	31
B			1	4	1	2	16	1	3	3	4		6	6		10	57
CH		1		1			9		1	2	2			1		4	21
D	7	7	2		7	8	54		2	27	14	1	10	7	16	56	218
DK	2	2		8			5		2	3			3	1	1	8	35
E	2	5		8		2	24	2		9	8		3	6	4	18	91
F	6	14	9	43	3	26		2	7	39	9		6	14	9	115	302
FIN		3		1	2	2	2		2	1	1					2	16
G		5	2	3	4		26	2			3		7	2		6	60
I	4	4	1	28	4	3	40	1	3		12	1	3	3	1	19	127
IRL		2	1	8		8	9		2	5			3	3	2	8	51
N				2	1	1	1			4						1	10
NL	3	4		9	4	2	9			3	3			1	11	4	53
P	2	6		11	1	7	14	2		3	4		3			12	65
S		2		13	1	2	8			2	8	3	6			10	55
UK	1	11	3	42	5	15	80	2	1	21	5		4	4	9		203
Tot.	27	69	19	188	36	78	304	12	23	126	73	5	57	50	53	275	1395

Appendix 3: Actual student mobility without an Erasmus grant

from \ to	A	B	CH	D	DK	E	F	FIN	G	I	IRL	N	NL	P	S	UK	Total
A																	0
B							3		1								4
CH																	0
D							1			1						19	21
DK																	0
E		1					3										4
F		3							2							11	16
FIN																	0
G					1												1
I																	0
IRL		1				1											2
N																	0
NL							2										2
P				2		1											3
S																	0
UK					1		2						1				4
Tot.	0	5	0	2	2	2	11	0	3	1	0	0	1	0	0	30	57

Appendix 4

These tables summarise the data of figures 1, 2 and 3, together with similar data for teaching staff mobility.

	Student Mobility								Pick-up ratios			
	Actual		Without Grant		Total Actual		Proposed		Erasmus		All	
Country	out	in	out	in	out	in	out	in	out	in	out	in
A	17	9	0	0	17	9	31	27	54.84%	33.33%	54.84%	33.33%
B	11	17	4	5	15	22	57	69	19.30%	24.64%	26.32%	31.88%
CH	18	9	0	0	18	9	21	19	85.71%	47.37%	85.71%	47.37%
D	161	79	21	2	182	81	218	188	73.85%	42.02%	83.49%	43.09%
DK	6	15	0	2	6	17	35	36	17.14%	41.67%	17.14%	47.22%
E	37	24	4	2	41	26	91	78	40.66%	30.77%	45.05%	33.33%
F	138	153	16	11	154	164	302	304	45.70%	50.33%	50.99%	53.95%
FIN	7	5	0	0	7	5	16	12	43.75%	41.67%	43.75%	41.67%
G	12	3	1	3	13	6	60	23	20.00%	13.04%	21.67%	26.09%
I	67	50	0	1	67	51	127	126	52.76%	39.68%	52.76%	40.48%
IRL	24	38	2	0	26	38	51	73	47.06%	52.05%	50.98%	52.05%
N	1	0	0	0	1	0	10	5	10.00%	0.00%	10.00%	0.00%
NL	14	29	2	1	16	30	53	57	26.42%	50.88%	30.19%	52.63%
P	15	13	3	0	18	13	65	50	23.08%	26.00%	27.69%	26.00%
S	46	36	0	0	46	36	55	53	83.64%	67.92%	83.64%	67.92%
UK	88	182	4	30	92	212	203	275	43.35%	66.18%	45.32%	77.09%
Total	**662**	**662**	**57**	**57**	**719**	**719**	**1395**	**1395**	**47.46%**	**47.46%**	**51.54%**	**51.54%**

	Teaching Staff Mobility								Pick-up ratios			
	Actual		Without Grant		Total Actual		Proposed		Erasmus		All	
Country	out	in	out	in	out	in	out	in	out	in	out	in
A	0	0	0	0	0	0	0	0			0.00%	
B	5	2	2	0	7	2	6	4	83.33%	50.00%	116.67%	50.00%
CH	2	0	0	0	2	0	1	2	200.00%	0.00%	200.00%	0.00%
D	2	4	0	0	2	4	4	1	50.00%	400.00%	50.00%	400.00%
DK	1	1	0	0	1	1	1	1	100.00%	100.00%	100.00%	100.00%
E	1	1	0	0	1	1	1	0	100.00%		100.00%	
F	11	4	2	2	13	6	7	3	157.14%	133.33%	185.71%	200.00%
FIN	0	0	0	0	0	0	1	1	0.00%	0.00%	0.00%	0.00%
G	3	7	2	6	5	13	7	11	42.86%	63.64%	71.43%	118.18%
I	4	5	0	0	4	5	3	1	133.33%	500.00%	133.33%	500.00%
IRL	1	0	1	1	2	1	2	2	50.00%	0.00%	100.00%	50.00%
N	0	0	0	0	0	0	0	0			0.00%	
NL	1	5	4	0	5	5	4	8	25.00%	62.50%	125.00%	62.50%
P	1	4	0	0	1	4	1	1	100.00%	400.00%	100.00%	400.00%
S	2	2	1	1	3	3	2	2	100.00%	100.00%	150.00%	150.00%
UK	3	2	0	2	3	4	4	7	75.00%	28.57%	75.00%	57.14%
Total	**37**	**37**	**12**	**12**	**49**	**49**	**44**	**44**	**84.09%**	**84.09%**	**111.36%**	**111.36%**

Appendix 5

This table serves as the basis for Figures 5 and 6. It is based on data for each individual ICP contract.

	Individual pick-up ratio per ICP					Total pick-up ratio per country					Average pick-up ratio per country				
	Actual	No grant	Proposed	Erasmus	All	Actual	No grant	Proposed	Erasmus	All	Actual	No grant	Proposed	Erasmus	All
ICP-93-A-3013/13	3	0	12	25.00%	25.00%	3	0	12	25.00%	25.00%	3	0	12	25.00%	25.00%
ICP-93-B-1008/13	12	0	43	27.91%	27.91%	114	6	282	40.43%	42.55%	19	1	47	33.22%	36.67%
ICP-93-B-1028/13	7	2	14	50.00%	64.29%										
ICP-93-B-1057/13	6	0	45	13.33%	13.33%										
ICP-93-B-1187/13	3	0	23	13.04%	13.04%										
ICP-93-B-2017/13	8	4	62	12.90%	19.35%										
ICP-93-B-3029/13	78	0	95	82.11%	82.11%										
ICP-93-CH-3013/13	10	0	22	45.45%	45.45%	10	0	22	45.45%	45.45%	10	0	22	45.45%	45.45%
ICP-93-D-2039/13	13	0	34	38.24%	38.24%	48	20	110	43.64%	61.82%	12	5	27.5	42.59%	57.46%
ICP-93-D-2065/13	13	1	28	46.43%	50.00%										
ICP-93-D-3048/13	17	19	34	50.00%	105.88%										
ICP-93-D-3049/13	5	0	14	35.71%	35.71%										
ICP-93-F-1004/13	13	0	40	32.50%	32.50%	156	5	351	44.44%	45.87%	15.6	0.5	35.1	45.86%	47.47%
ICP-93-F-1064/13	37	0	88	42.05%	42.05%										
ICP-93-F-1081/13	3	0	14	21.43%	21.43%										
ICP-93-F-1125/13	21	0	30	70.00%	70.00%										
ICP-93-F-1148/13	6	0	19	31.58%	31.58%										
ICP-93-F-1220/13	17	0	38	44.74%	44.74%										
ICP-93-F-1232/13	6	0	8	75.00%	75.00%										
ICP-93-F-1390/13	16	0	43	37.21%	37.21%										
ICP-93-F-2090/13	21	0	40	52.50%	52.50%										
ICP-93-F-3077/13	16	5	31	51.61%	67.74%										
ICP-93-G-3050/13	9	7	72	12.50%	22.22%	9	7	72	12.50%	22.22%	9	7	72	12.50%	22.22%
ICP-93-I-1090/13	27	0	47	57.45%	57.45%	39	0	76	51.32%	51.32%	13	0	25.333333	48.00%	48.00%
ICP-93-I-1145/13	8	0	13	61.54%	61.54%										
ICP-93-I-1177/13	4	0	16	25.00%	25.00%										
ICP-93-IRL-1019/13	20	0	40	50.00%	50.00%	39	0	87	44.83%	44.83%	19.5	0	43.5	45.21%	45.21%
ICP-93-IRL-1044/13	19	0	47	40.43%	40.43%										
ICP-93-NL-1111/13	7	6	15	46.67%	86.67%	20	6	41	48.78%	63.41%	10	3	20.5	48.33%	68.33%
ICP-93-NL-1164/13	13	0	26	50.00%	50.00%										
ICP-93-P-2029/13	7	2	21	33.33%	42.86%	7	2	21	33.33%	42.86%	7	2	21	33.33%	42.86%
ICP-93-S-2010/13	24	0	29	82.76%	82.76%	78	0	109	71.56%	71.56%	39	0	54.5	75.13%	75.13%
ICP-93-S-2030/13	54	0	80	67.50%	67.50%										
ICP-93-UK-1078/13	19	0	19	100.00%	100.00%	139	11	212	65.57%	70.75%	17.375	1.375	26.5	71.02%	74.84%
ICP-93-UK-1238/13	20	0	21	95.24%	95.24%										
ICP-93-UK-1274/13	14	11	36	38.89%	69.44%										
ICP-93-UK-1422/13	11	0	13	84.62%	84.62%										
ICP-93-UK-1481/13	8	0	10	80.00%	80.00%										
ICP-93-UK-2171/13	38	0	60	63.33%	63.33%										
ICP-93-UK-3017/13	6	0	12	50.00%	50.00%										
ICP-93-UK-3029/13	23	0	41	56.10%	56.10%										
Total	**662**	**57**	**1395**	**47.46%**	**51.54%**	**Total pick-up ratio for all countries**									
Average	**16.15**	**1.39**	**34.02**	**48.64%**	**53.18%**	**Average pick-up ratio for all countries**									
deviation				**0.2222**	**0.2410**										
median				**46.67%**	**50.00%**										

Synthesis Report of the European Evaluation Conference

I. Conclusions

Science in general and physics in particular are, by their search for understanding nature, cultural activities. By their applications they are important in a modern high-technology society for promotion of further technological progress and economic growth. Physics teaching provides scientific literacy, i.e. it shapes the analytic thinking of a society, important for the solution of complicated social problems. Therefore popularisation efforts should be encouraged. Thus, good practice in physics teaching is essential both at the secondary school (SS) level and at the university level, both for non-physics and for physics students. Therefore there is a need for well qualified teachers who can teach physics in an attractive, up-to-date way.

Studies at universities (and equivalent institutions) towards a degree in physics train young people for work as a "physicist" in: *(i)* research, *(ii)* industry and *(iii)* teaching. In addition, *(iv)* many physics graduates already occupy and will occupy more and more jobs in society outside the field of physics *in stricto senso*, where flexibility, creativity, intuition, problem-solving, communication skills and teamwork are crucial.

The basic and intermediate training in physics should be oriented towards all four career opportunities mentioned. Those studies should therefore be sufficiently general in scope, include some interdisciplinary courses and have some connections with social and behavioural sciences as well as with economy and management.

On the other hand advanced (in particular doctoral) studies in physics should allow the students to acquire profound knowledge in specialized fields and obtain high quality research training. To achieve this, institutions must undertake research in at least some of the active fields of present-day physics.

Physics as a scientific discipline does not possess a "European dimension" in itself: the physical laws are indeed universal. Therefore the "European dimension" in physics studies must be achieved by other means such as student and teaching staff mobility, attendance of international summer/winter schools, by language training and with the help of European information networks.

Research and teaching in physics in Europe have a good reputation. They are highly diversified, which constitutes a richness which must be preserved.

Despite this high quality of physics in Europe, a certain number of problems arise; some of them are general, others concern particular regions of Europe or particular countries. Problems directly related to the Recommendations are listed in the next section; some of the others are listed here:

a) There seems to be a decreasing interest in physics in secondary schools (SS);

b) physics is considered difficult and repulsive both by pupils in SS and by non-Physics students at university level;

c) in some countries physics teaching in SS seems to have stayed well behind modern developments in physics;

d) in some countries the number of physics students at university level is decreasing;

e) there is a low proportion of women among physics students and teaching/research staff; this is more pronounced in the northern than in the southern part of Europe;

f) the effective duration of the studies is often (much) longer than the official one; in some cases the official duration of the first-degree studies is rather too long;

g) in some countries the drop-out rate is high (although it should, of course, not be decreased by sacrificing quality); no systematic information is available about the reasons for abandoning physics studies;

h) the contents of training in physics is isolated from contacts with industry and research laboratories;

i) the pronounced diversity in the structure of the physics studies in Europe may create problems connected with mobility and recognition, e.g. the mathematical approach in continental Europe against the experimental approach in the United Kingdom and Ireland;

j) Open and Distance Learning is little used in physics education.

Some further problems are common to all disciplines and require action by the relevant (national and/or institutional) bodies:

k) Academic calendars (subdivision of the academic year, beginning and end of the course and examination periods) are very different from country to country; student and teaching staff mobility may thus be impeded;

l) in some countries pre-university foreign language training is insufficient to allow students to make efficient use of mobility.

II. Recommendations

1) Student mobility

Problems:

(i) Mobility of physics students (mainly at the undergraduate level) seems to be lower than in other disciplines.

(ii) In some countries there are large imbalances of inflow and outflow of students.

(iii) Potential of exchange with industry and with international or large national research laboratories is not sufficiently exploited.

(iv) Exchange at the level of doctoral studies is low.

(v) Quality and success of exchange (recognition, no appreciable loss of study time, improvement of knowledge of foreign language and culture, better job prospects) are not well known.

Propositions:

(i) Promote student mobility in general by:

a) inclusion of as many, hopefully with time all, institutions as possible in the exchange schemes, so that all students may profit from mobility if they wish to do so;

b) making information on possible exchange widely available with modern communication means (equivalent of "ECTS information package" or of "EMSPS database" on World-Wide-Web (WWW)).

(ii) Study reasons for and take special measures in countries with particular low outflow and inflow.

(iii) Facilitate establishment of study programmes and recognition by:

a) Introducing the European Community Course Credit Transfer System (ECTS);

b) generalising the use of the "student application form" as in ECTS or the "student file" as in EMSPS;

c) providing necessary information on WWW, see above.

(iv) Establish contacts between students and potential employers and make use of "external" expertise by extending student mobility to "project work" (diploma, M.Sc. thesis, or similar) performed in industry or in international or large national research laboratories (cf. the French initiative CIFRE see p.64 [FR-4] of conference book with National Reports).

(v) Promote mobility during advanced (mainly doctoral) studies by:

a) Giving an additional (European) qualification (*"doctor europeus"*) to the degree given by the home institution (conditions: exchange of at least 3 months in one or more foreign universities/research laboratories; international thesis jury; paper corresponding to thesis published in a refereed scientific journal; part of the defence in a foreign language) (cf. French example p.67 [FR-7] of conference book with National Reports).

b) organising recognised "summer/winter schools" (see below point 4).

(vi) Continuously monitor the quantitative and qualitative aspects of student mobility in physics and propose adequate measures to improve the situation.

2) Teaching staff mobility

Problems:

(i) Although staff mobility for research is well developed in physics, the same seems not to be the case for teaching.

(ii) Universities seldom call on physicists working in industry to give lectures.

Propositions:

(i) Teaching staff mobility between institutions should be given much greater priority and funding; it is not only beneficial for the staff members themselves and the participating institutions, but allows also non-moving students to have some of the benefits otherwise obtained through the student mobility programme.

(ii) Teaching staff mobility between industry and universities should be encouraged and funded.

3) Curriculum development

Problems:

(i) There is little exchange of information on curriculum development and on research on education in physics going on in individual countries and individual institutions.

(ii) There is little common effort.

(iii) The high degree of diversity of physics studies in Europe leads to difficulties for academic recognition of study periods, professional recognition of diplomas and for comparing curricula.

Propositions:

(i) Exchange of information: all universities should be encouraged to make available on WWW the information on their physics studies (structure of studies, degrees awarded, contents of studies,

summary of the content of each course, ECTS credits attributed to each course, assessment and grading scale used with respect to the ECTS grading scale).

(ii) Curriculum development projects should be encouraged; funded projects should publish intermediate and final results in an easily accessible way (WWW, electronic bulletin board, specialised international journals).

(iii) Conferences on the content of physics studies and on new ways to teach physics should be organised regularly.

(iv) Comparability studies should be encouraged.

(v) Short-cycle programmes issuing lower degrees (B. Sc.) with emphasis on physics are of interest to Central and Eastern European countries. Dissemination of experience gathered by western European universities should be encouraged.

4) Intensive Programmes

Problems:

(i) There are many advanced "summer/winter schools", but usually attendance is not formally recognised in view of obtaining an advanced degree.

(ii) Information on all schools is not readily available to all students; schools are not "synchronized".

(iii) There are too few programmes of in-service training or refresher courses for Secondary School Physics Teachers (SSPT), in particular at a European or international level; there is little contact between SSPTs and university lecturers teaching introductory physics and thus little effort to smooth the transition in physics from SS to universities.

Propositions:

(i) Find means to recognise summer/winter schools and other IPs as part of the (advanced mainly doctoral, possibly undergraduate) training, possibly by using an adapted ECTS Credit System.

(ii) Organise European Intensive Courses (summer/winter schools) for SSPTs in order to:

a) Update the SSPTs on developments in physics and teaching methods applied to physics;

b) establish contacts and ensure coordination between physics teaching at the SS and the introductory university levels.

(iii) Take the necessary steps to ensure information dissemination and possible synchronisation of the schools presenting intensive programmes.

III. Outlook : Towards a European Physics Education Network (EUPEN)

Most of the above recommendations need further study before they can be transformed into actions. All propositions cannot be implemented at the same time, therefore priorities must be set. Also, once launched, actions need to be monitored and improvements proposed and carried out.

It is therefore proposed to set up a permanent forum, which might be called the European Physics Education Network (EUPEN) forum which would assume the responsibility for these promotional, advisory and operational tasks.

EUPEN shall apply for support from the European Commission under the Socrates heading of the *Academic Development Programmes* (ADP) for its action within the "Socrates space". It may possibly ask for funding from other sources. It shall operate in close connection with the European Physical Society (EPS), more specifically its Interdivisional Group on Physics Education (IGPE), consisting of the Forum on Education, the University Teaching Section and the European Mobility Scheme for Physics Students (EMSPS). It shall cooperate with similar bodies acting in other parts of the world (Asian Physics Education Network (ASPEN), Arab Physics Education Network (ARAPEN); and the Council of Inter-American Physics Education Conferences)) or on a global scale (International Commission of Physics Education (ICPE).

The network shall be open to all European universities and equivalent institutions giving degrees in physics, to national and European societies of physicists, of physics teachers (SS teachers included) and of physics students e.g. IAPS, to industries and international/national research laboratories employing physicists.

It is proposed that the Scientific Committee of the Ghent Conference acts as a working party for setting up this EUPEN network; it shall formulate its terms of reference and file a first ADP application to Socrates.

Finally, note that several institutions in central and eastern Europe have successfully taken part in exchange programmes with universities from western Europe e.g. via the Tempus (and SOROS) programmes in the EMSPS scheme.

Physics might set a promising example to continue and intensify the collaboration in education and training within all of Europe, in particular by integrating institutions from Central and Eastern Europe and thus their students and teachers, in the proposed EUPEN network and in the new Socrates programme.

Annex

Synthesis Report of the European Evaluation Conference held at the Aula,University of Ghent, Belgium
April 7 & 8, 1995 – H. Ferdinande – Universiteit Gent B-9000 Gent, België

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VI

Agricultural Sciences

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Agricultural sciences within Erasmus (1987-1995)

Philippe RUFFIO and Jaume MAS i RUE[1]

1. Approach and method

This study has been carried out on the basis of different data made available by the Commission and the Erasmus Bureau.

It draws in particular on the following:

- The information statistics available in the publications of the Commission or in the internal Erasmus Bureau data base;
- the different monitoring and evaluation studies on Erasmus, carried out by the research team at the Wissenschaftliches Zentrum für Berufs- und Hochschulforschung of the Universität Gesamthochschule at Kassel (Germany);
- an analysis (carried out specifically for the present study) of the "statements of activities and expenditure" from Inter-university Cooperation (ICP) network coordinators for the year 1993/94. In particular, this made it possible to have very recent information on student and teaching staff mobility (1993/94 academic year).

These different sources provide access to two types of information:

- Statements of intention and forecasting of activity in the applications addressed to the Erasmus Bureau (submitted and approved applications);
- the activity which actually took place analysed with reference to the ICP "statements of activities", or specific surveys and data passed on by the Erasmus National Grant Awarding Authorities (work done at Kassel).

Bearing in mind the limited number of ICP contracts (Table 1) relating to intensive programmes (IPs)(8 contracts in 1994/95) and joint development of new curricula (CD)(7 contracts), the study will essentially be concerned with student and teaching staff mobility activities (66 and 21 contracts respectively). The definition of these terms is to be found in the Erasmus *Guidelines for Applicants*.

[1] *Philippe RUFFIO and Jaume MAS i RUE, École nationale supérieure agronomique de Rennes (France), 65 rue de St Brieuc, F - 35042 Rennes Cedex. See also RUFFIO P. and MAS i RUE J. (1995).*

Table 1. Development of Erasmus activity in agriculture from 1987/88 to 1994/95.

(approved ICPs)

	ICP	SM	TS	CD	IP
87/88	10	-	-	-	-
88/89	40	37	4	4	4
89/90	40	40	3	3	1
90/91	48	44	5	1	5
91/92	47	45	9	3	4
92/93	56	55	11	3	5
93/94	68	67	16	5	7
94/95	68	66	21	7	8

The Erasmus Bureau has a nomenclature for 18 major academic subject areas, of which the agricultural sciences are one. This category in turn includes food science and technology, horticulture, fisheries and forestry. Veterinary medicine is excluded (coming instead under medical sciences).

In all, the agricultural sciences have ten sub-divisions:

	Code
• Agricultural sciences (in the broad sense)	1.0
• Agriculture	1.1
• Agricultural and rural economics	1.2
• Food science and technology	1.3
• Horticulture	1.4
• Fisheries	1.5
• Forestry	1.6
• Animal husbandry	1.7
• Tropical and sub-tropical agriculture	1.8
• Other	1.9

For linguistic convenience, "agricultural sciences" and "agriculture" will be used interchangeably to refer to all the foregoing disciplines considered collectively.

Without making any finer distinction, the terms "universities" and "institutions" will be used to refer to all higher education establishments (irrespective of whether they are for example, universities, grandes écoles or institutes). Non-university

institutions will also be considered[2]. The focus will be on the institution as a whole, its structure in terms of faculties or departments/institutes is not taken into consideration.

In spite of the recent accession of Austria, Finland and Sweden to the EU, the former designations of "Europe of the Twelve" and "EFTA countries" will be maintained for linguistic convenience and homogeneity in the statistical comparisons.

[2] *Such institutions make an important contribution to agricultural training in numerous countries.*

2. The European network of inter-university cooperation in agricultural and food sciences

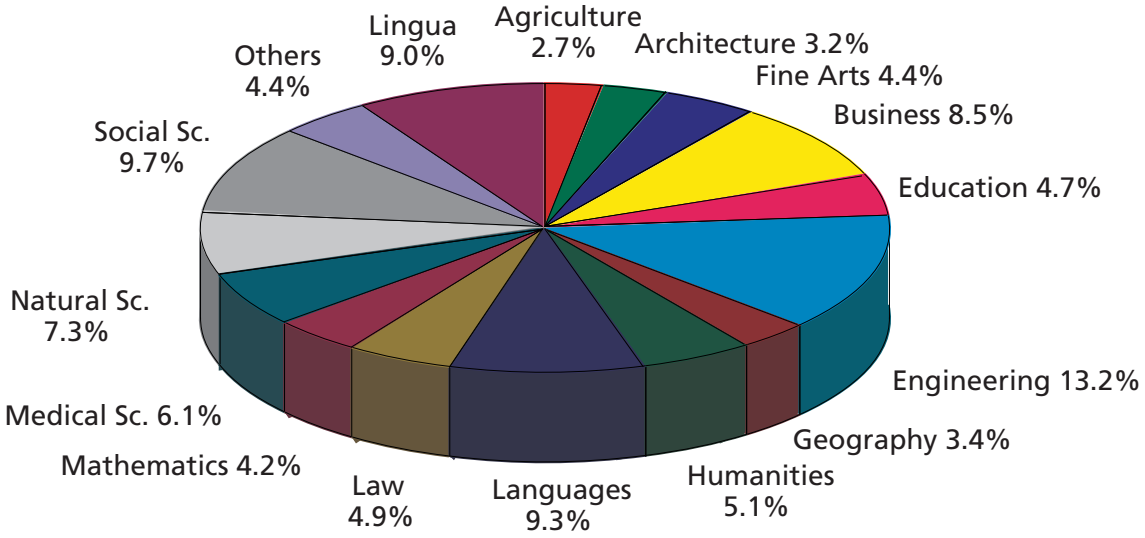
2.1. The position of agricultural sciences in Erasmus

With an annual average of 70 to 80 ICP applications, around 70 of which are contractually accepted, agricultural sciences have a marginal representation in Erasmus (Fig. 1). They account for around 3% of ICP applications and contracts and 2% of student mobility.

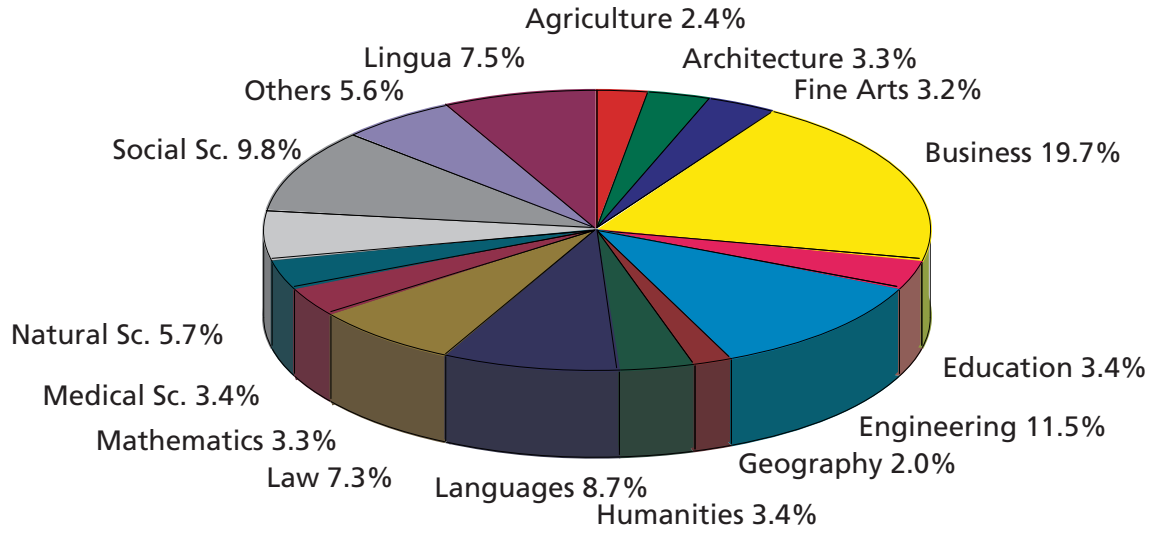
This state of affairs corresponds to the proportion of students in this discipline in European higher education (some 2.1%).

Figure 1 : Breakdown of ICPs by field of study

Approved ICPs, 1994/95



Forecast student mobility, 1994/95



Generally, it is interesting to note that agriculture in Erasmus has developed at a rate at least equivalent to that of the overall Programme growth, notwithstanding lingering doubts about it in 1990 (RUFFIO, 1990). From 1987 to 1994, the number of applications went up by a factor of 3.6 (as compared with 3.3 for Erasmus overall), even though a relative levelling out was observed at the start of the 1990s.

As far as student exchange is concerned, the rate of growth has been even faster, since the number of mobile students forecast in accepted applications has risen by a factor of 10.6 in the period from 1988/89 to 1994/95 (alongside 10.5 for engineering), compared with 8.5 for all disciplines considered together. The number of actual student exchanges in the period between 1988/89 and 1993/94 has increased eightfold in agriculture, and by a factor of 6.9 in Erasmus as a whole.

In the first years of the Programme, participation in agriculture benefited from special attention on the part of the Commission. Current trends also have to be interpreted in light of the relative decline (in terms of the student population) in agricultural training in several countries.

The agricultural sciences stand between subject areas in which growth is strong, such as education (where forecasts for student mobility have risen by a factor of 20 between 1988/89 and 1994/95) and mathematics (a growth factor of 15), and relatively important sectors in which growth has been slower, such as law and business administration (a factor of 6.5 for each), geography (7.3) and social sciences (8.6). The rate of growth in agriculture is very close to that in engineering.

The position of agriculture in Erasmus varies from one country to the next, not however in any direct relation to the importance of the agricultural and food sector in the national economy concerned.

Taking into account the different available indicators (the number of ICPs with respect to the country of the coordinating institution, as in Fig. 2; the participation of each country in the different ICPs[3], shown in Fig. 3; student mobility, both forecast and actual, with respect to the country of origin, given in Figs. 4 and 5), it is possible to consider three types of country with regard to the importance of agriculture in the activity of each:

- **Countries in which agriculture is under-represented**, in comparison with the European average: Germany; Denmark; the United Kingdom; as well as the majority of EFTA countries, even though their position has not yet stabilised (in Norway and Sweden and, to a lesser extent, Iceland and Austria; for the last of these countries the position varies according to the chosen indicator);
- **countries in which agriculture is substantially over-represented**. This is the case with Greece, Portugal and Ireland (even though the latter coordinates few ICPs) and, to a lesser extent, Finland and Switzerland;
- in the other countries (Spain, France, Italy, the Netherlands and, to a lesser extent, Belgium), **the representation of agriculture corresponds to the Community average**, or is even slightly above it.

This categorisation has changed little over time and is comparable with that observed in 1990 (RUFFIO, 1990). This stability is thus clearly structural. Denmark is a special case (to be examined further) with a decreased participation in agriculture.

This situation can also be clearly interpreted in the light of the actual representation of agriculture in higher education throughout Europe, considering each of the countries concerned in turn. The only data available, from EUROSTAT, are not ideal and open to criticism on the grounds that definitions of agriculture vary from country to country. Guarded reference to them however, reveals a somewhat contrasted situation (Table 2).

Higher education in agricultural sciences appears to be developed well above the Community average in Austria, Finland, Greece, the Netherlands and Portugal.

At the other end of the scale, it occupies a less important position in the United Kingdom, in particular Belgium, France and Ireland, as well as Norway, Sweden and Switzerland.

Germany, Denmark, Spain and Italy are just over the Community average.

Comparison of these data with those on Erasmus mobility (Table 2) reveals a situation which is quite different[4] from the one observed when (as stated earlier) the Erasmus European average is the reference point.

It would thus appear that in Erasmus and with respect to the actual population, agriculture is:

- **Substantially over-represented** in Ireland, Switzerland and to a lesser extent in France;
- **well represented** in Belgium, Spain and the United Kingdom;
- **under-represented** in Germany, Austria, Denmark, Greece, Finland and, even Norway;
- **balanced in participation** in Italy, the Netherlands, Portugal (less so) and Sweden.

In other words, the over-representation of Ireland, Greece and Portugal in Erasmus is not a problem compared with the strength of agricultural training in those countries; neither is it a problem as far as the under-representation of the United Kingdom is concerned. On the other hand, the situation may perhaps be judged a greater cause of concern in countries such as Austria, Germany and Denmark as well as, to a lesser extent, Norway. Inter-university cooperation in agriculture should thus be more specifically encouraged in these latter countries.

[3] The "participation" of an institution measures the number of ICPs in which it is present. These data are then added up for all institutions in a particular country to determine its "country participation".

[4] Assuming the Eurostat data are sufficiently reliable.

Figure 2. ICPs in Agricultural Sciences.
as a % of the number of ICPs coordinated within each eligible state (each country: 100)

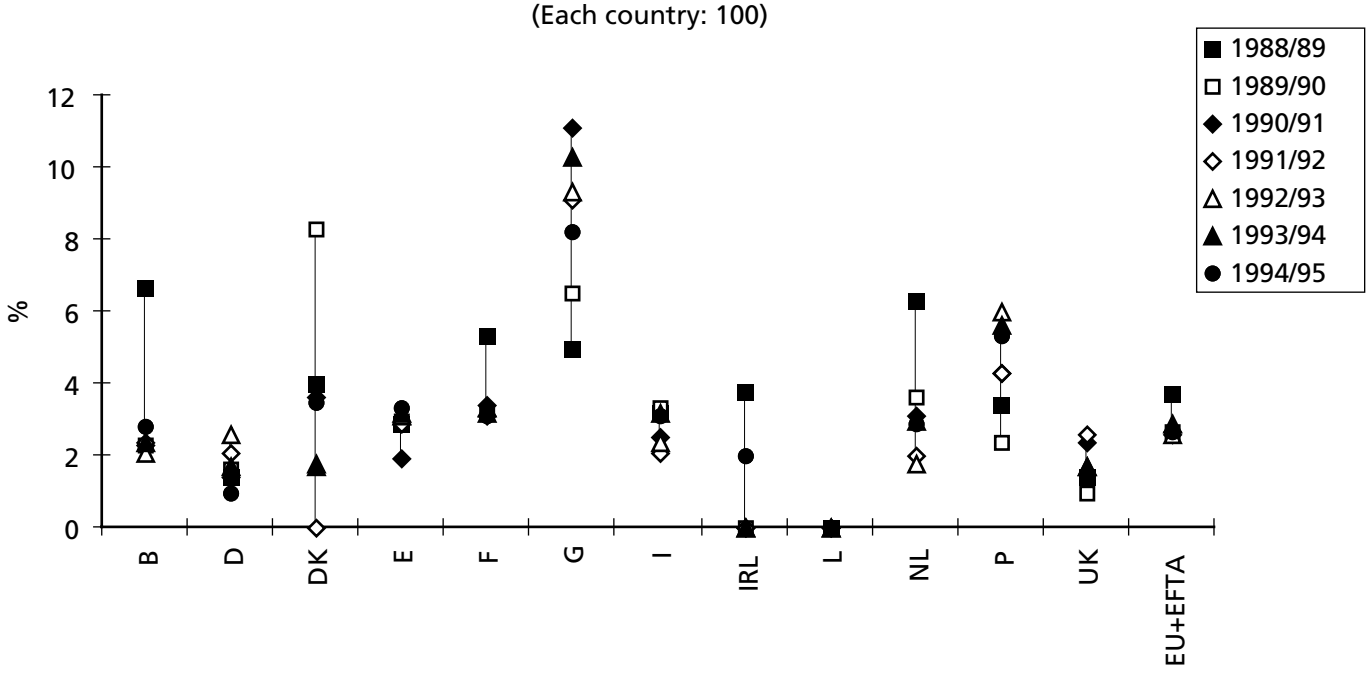


Figure 3. ICPs in Agricultural Sciences.
as a % of the number of participations within each eligible state (each country: 100)

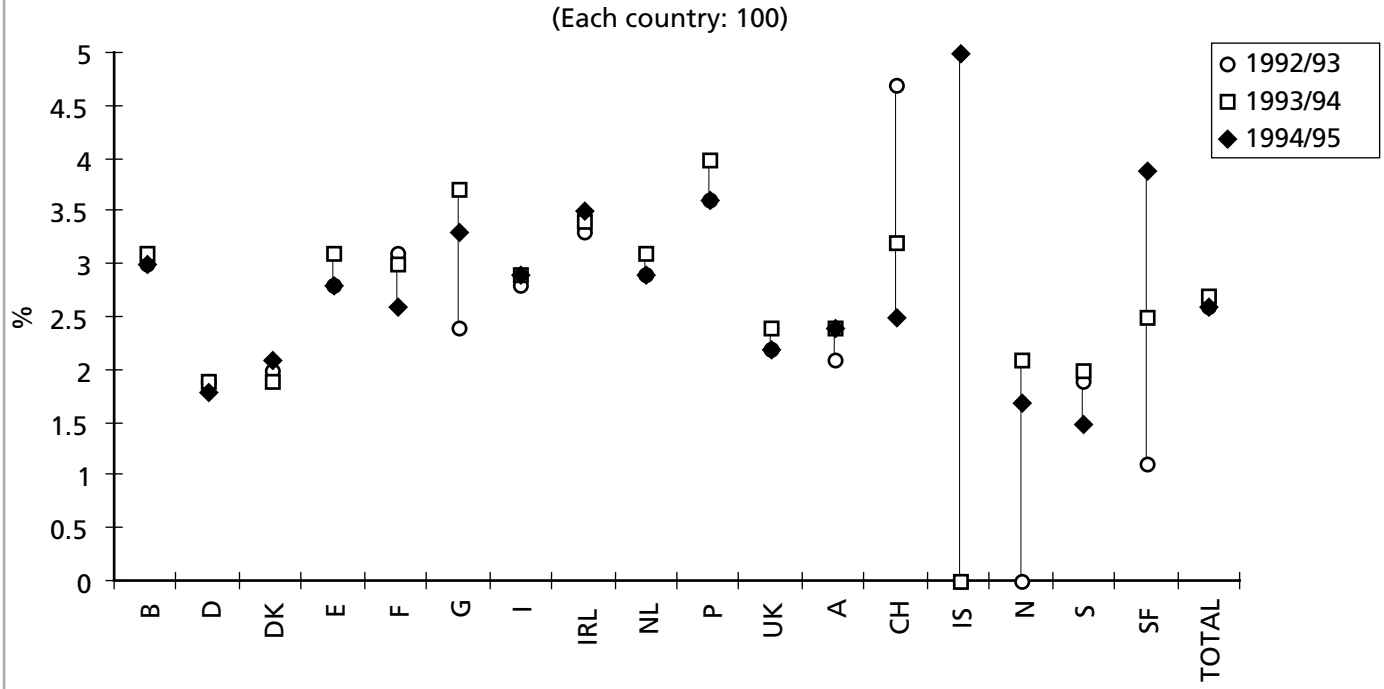


Figure 4. Percentage of Erasmus students in Agricultural Sciences.

compared to the total number of Erasmus students from each eligible state (each country: 100)

(Forecast mobility in approved ICPs, by home institution)

(Each country: 100)

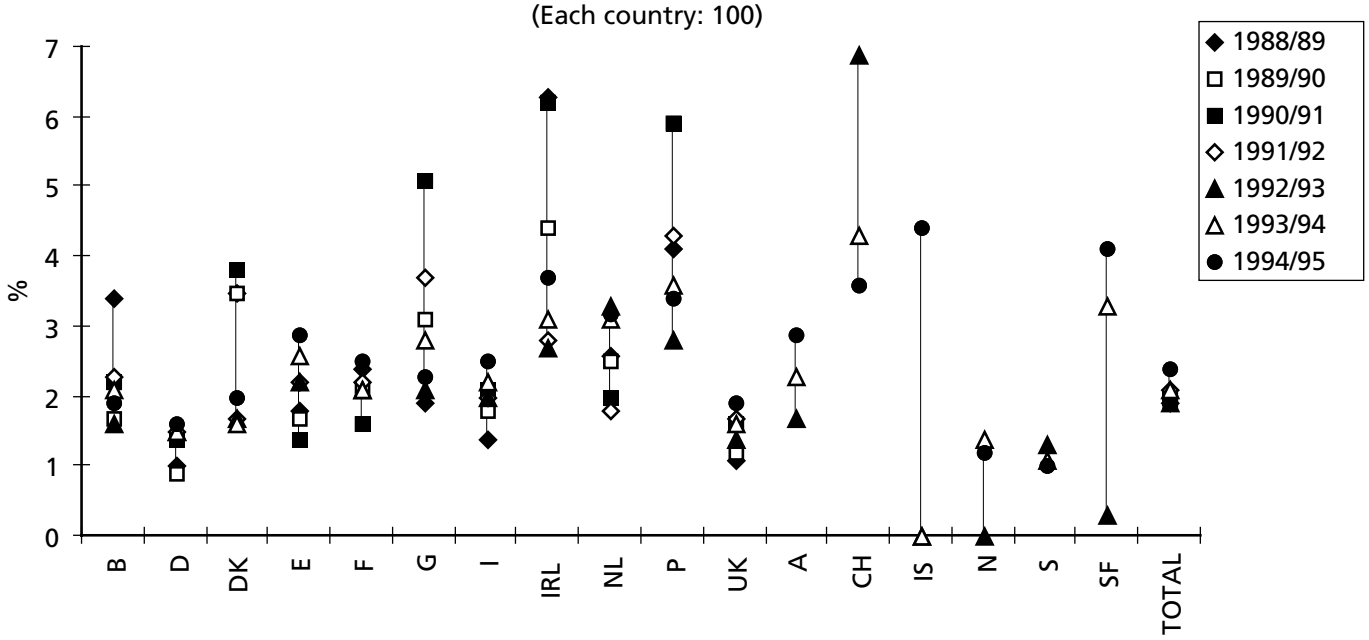
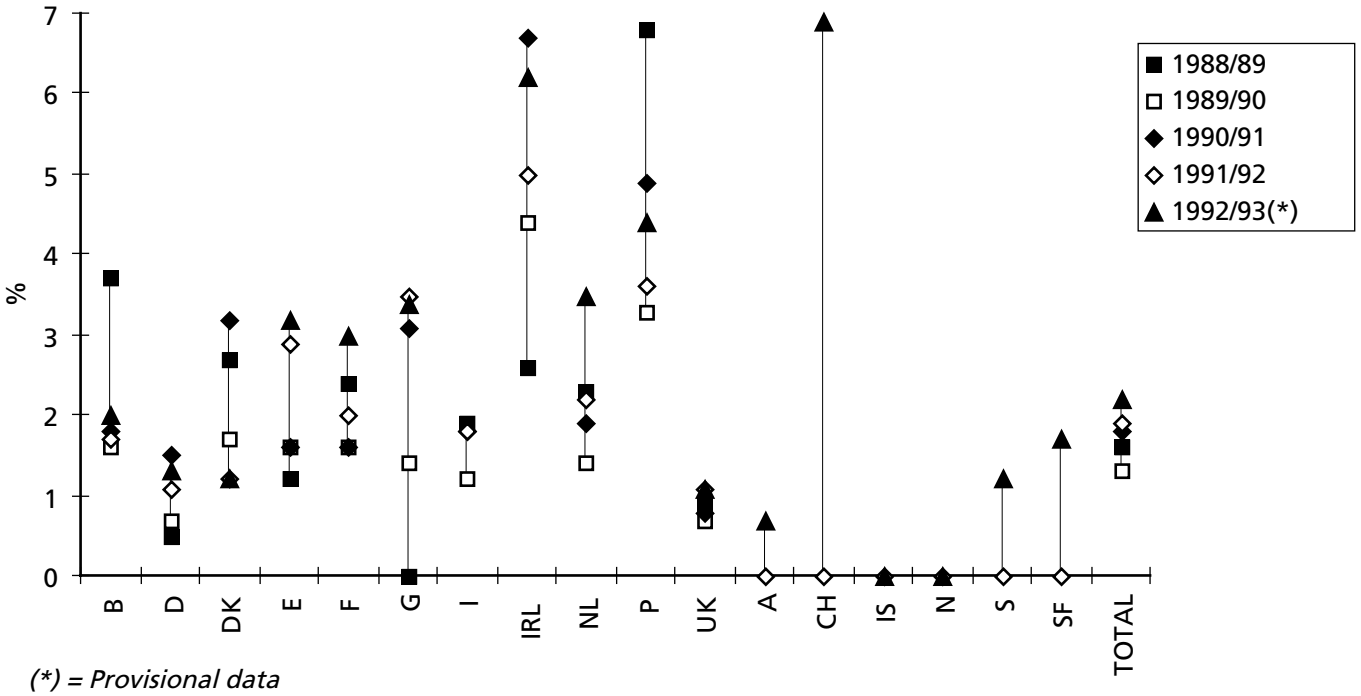


Figure 5. Percentage of Erasmus students in Agricultural Sciences.

compared to the total number of Erasmus students from each eligible state (each country: 100)

(Actual mobility in approved ICPs, by home institution)

(Each country: 100)



(*) = Provisional data

Figure 6. Distribution of ICPs by country of the coordinating institution.

(EUR 12 + EFTA =100)

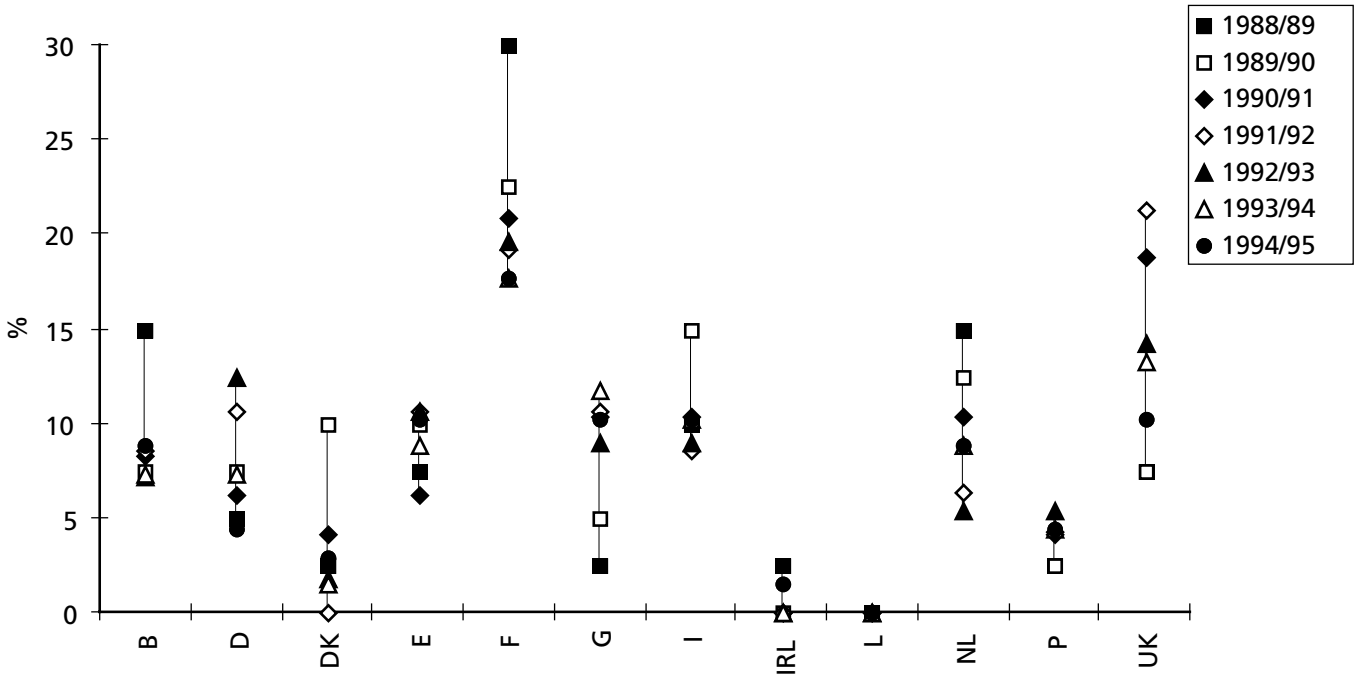


Figure 7. Distribution of participation in approved ICPs in Agriculture.

(EUR 12 + EFTA =100)

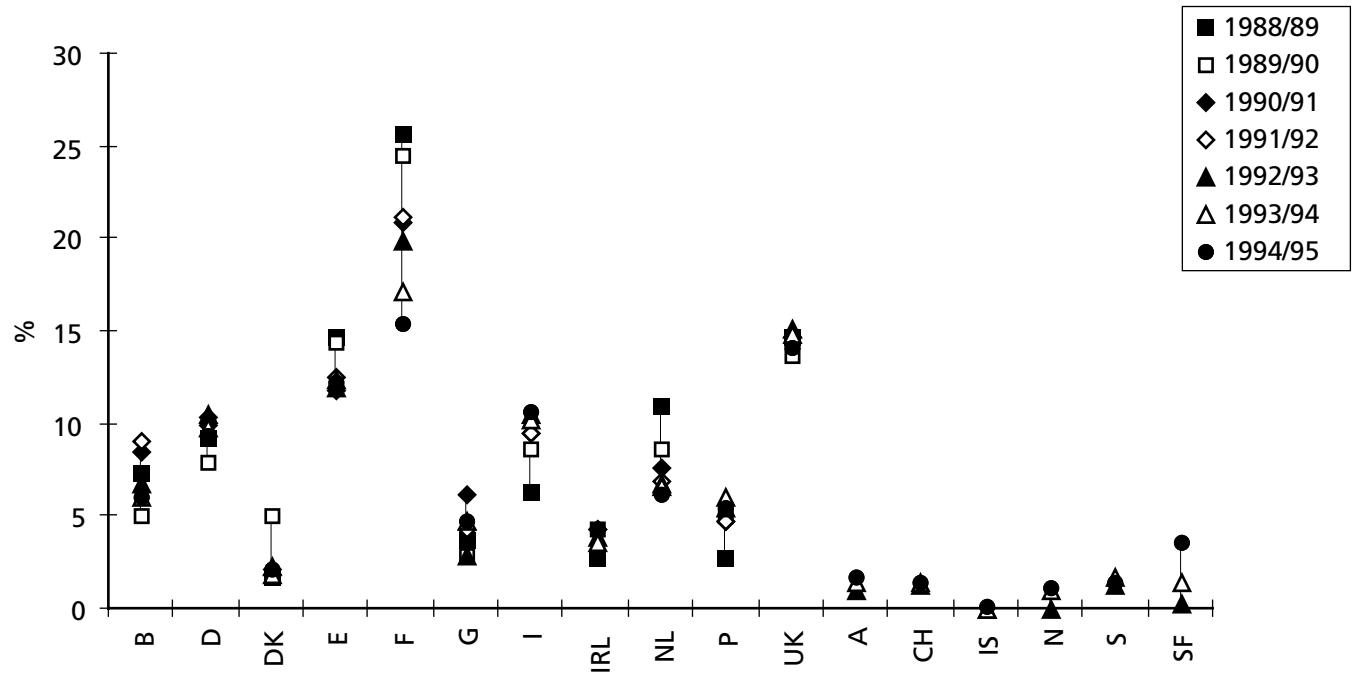


Table 2.
Representation of the student population in Agriculture, in Erasmus and in the Higher Education of each country (as a %).

Country	Total Population (EUROSTAT)(1)	Erasmus	
		Real mobility 92/93	Forecast mobility 94/95
B	1.4	2.0	1.9
D	2.4	1.3	1.6
DK	2.3	1.2	2.0
E	2.6	3.2	2.9
F	1.5	3.0	2.5
G	5.7	3.4	2.3
I	2.1	-	2.5
IRL	1.4	6.2	3.7
NL	3.6	3.5	3.2
P	4.5	4.4	3.4
UK	0.9	1.1	1.9
EUR12	2.1	-	2.3
A	3.7	0.7	2.9
CH	1.4	6.9	3.6
N	1.3	0.0	1.2
S	1.1	1.2	1.0
SF	3.5	1.7	4.1
EFTA	2.3	-	2.5
TOTAL	2.1	2.2	2.4

(100 as an indicator for each country)
(1) = 1991/92 data for EFTA, DK, D, E, IRL, I, NL, P, UK ; 1990/91 data for B, G; adapted 1992/93 data, F.

2.2. The geography of the European agricultural network

In contrast to the previous section, the geographical composition of the network will be studied under this heading, taking account of the participation of the different countries.

From the institutional standpoint, inter-university cooperation may be analysed in terms of:

- The strength of each country's representation in the ICP networks;
- the breakdown of the programmes (ICPs) by the Member State of their coordinating institutions, which sheds some light on the capacity of universities to take initiatives;
- the participation of institutions in the ICPs which is in part the outcome of their own resourcefulness.

Overall (Table 3), France and the United Kingdom are present in over 60% of the ICPs in agriculture (63% and 71% respectively in 1994/95). Germany, Spain and Italy are in more than 45% of the networks, whereas the other countries in Europe of the Twelve (with the exception of Denmark) are present in between a quarter and a third of all programmes.

Denmark is conspicuously under-represented (15%) and indeed, barely better placed than the EFTA countries (10%), among which Finland appears particularly active (16%).

Table 3.
No. of ICPs in which each country is present (as a %).

Country	1994/95		1989/90-90/91
	ICP	%	%
B	23	33.8	21.9
D	35	51.5	28.1
DK	10	14.7	10.2
E	39	57.4	32.0
F	43	63.2	57.8
G	19	27.9	14.8
I	31	45.6	25.0
IRL	18	26.5	14.1
L	0	0.0	0.0
NL	26	38.2	32.8
P	17	25.0	16.4
UK	48	70.6	46.1
A	7	10.3	-
CH	7	10.3	-
FL	0	0.0	-
IS	1	1.5	-
N	4	5.9	-
S	7	10.3	-
SF	11	16.2	-

The current situation is the result of a major effort on the part of some countries, in comparison with 1989/90. Involvement in the ICPs has almost doubled in Germany, Spain, Greece, Italy and Ireland.

Analysis of the breakdown of ICPs by coordinating institution (Fig. 6) reveals the important part played by France which coordinates around 18% of the programmes in agriculture. Most other countries in Europe of the Twelve coordinate some 10% (Spain, Greece, Italy, United Kingdom) or slightly less (Belgium, the Netherlands); Germany, Denmark, Ireland and Portugal coordinate less than 5%, as do each of the EFTA countries which, as a group, coordinate 10% of the ICPs.

The situation has changed since the end of the 1980s. The relative presence of France has markedly decreased, while that of Greece has become far more conspicuous. Some countries have stayed fairly stable (among them Belgium, Denmark, Spain, Italy, Ireland and Portugal). On average, it may be concluded that there is a certain natural levelling out effect at around 8-10% and that this has occurred at the expense of the countries most active at the outset (particularly France and the United Kingdom).

In terms of the "participation" of institutions (Fig. 7), the analysis confirms the important part played by France and the United Kingdom, as well as Spain and Italy, who each represent over 10% of the institutional participation in Erasmus.

With the exception of the EFTA countries (less than 2%), the other European countries (Germany, Belgium, Greece, Ireland, the Netherlands and Portugal) stand at between 4% and 10% of total participations.

The exceptional position of Denmark (2% of the participation) is again evident, but has to be interpreted here in the light of the institutional organisation of agricultural training in this country[5].

Italy and Finland are the only countries which have experienced a strong relative growth in institutional participation over the period studied, while that of France has fallen very noticeably.

Besides providing a pointer to the level of activity of universities, participation also reflects the institutional structuring of training in the agricultural sciences in each country. In 1994/95, 213 institutions took part in Erasmus in agriculture[6]. The number varies from little more than single figure levels (in Austria, Switzerland, Iceland, Norway, Sweden and Denmark) to over 30 in the case of France and the United Kingdom.

The relation between participations and the number of institutions is indicative of **the extent to which institutions are involved in Erasmus**. The average number of ICPs in which an institution is present at European level, is 2.2 in 1994/95 (as compared to 1.6 in 1988/89). The average number of European contacts is highest among Austrian institutions (given that, in the agricultural and food sciences, only a single Austrian university exists in Wien), followed by the Swedish (2 participating institutions), the Danish (3 institutions), the Dutch (10) and the Irish (7). At the other end of the scale, those with the fewest contacts are Icelandic (1 participating institution), Norwegian (3), Finnish (12), British (34), Greek (11) and French (36).

Even if the countries with a large number of institutions taking part (the United Kingdom and France) are apparently penalised, the Spanish case (where there are 21 institutions with 2.7 participations on average) shows that this is not necessarily inevitable. The situation in the EFTA countries should be interpreted with caution, given their more recent participation in Erasmus.

Within a given country, the participation of different universities is very variable. In certain countries, such as Spain and Italy, activity is essentially concentrated with their most active institution, accounting for 40% and 22% respectively of their outgoing mobility (over 20 institutions take part in Erasmus in each of these two countries).

2.3. The size of networks

The size of the networks can be analysed with reference to three indicators:

- The number of institutions per ICP;
- the average number of participations per ICP;
- the average number of students who **are actually involved in exchanges**.

In agriculture, the institutional dimension (number of institutions and participations) has gone up by 2.5 in seven years, with the average number of students rising by 4.5 in the same period (as compared with a factor of three across all fields of study).

From the institutional standpoint, ICPs in agricultural sciences are on average, of a size fully comparable with the general trend in Erasmus (7 institutions and 7 participations on average per programme, in agriculture). However, notwithstanding a more rapid growth, agriculture networks have always exchanged smaller numbers of students (20 as against 30).

Moreover, a sizeable proportion of networks exchange less than 10 students (Fig. 8) and, in 1993/94, none exchanged over 100.

This tendency to concentration in the ICPs is a very general phenomenon within Erasmus, and stems from the wish of both partners and coordinators to rationalise activities. It is also an indirect result of the way the Programme has operated as regards selection criteria, contracts operating over many years and so forth, all of which have unquestionably encouraged the emergence of increasingly large ICPs.

[5] Only 3 institutions in this field take part in Erasmus.

[6] For Europe of the Twelve the figure is 191 in 1994/95; was 70 in 1988/89.

2.4. The main thematic trends

Around half of the ICPs are multidisciplinary networks. Developments since 1990, reveal a growth in this type of programme.

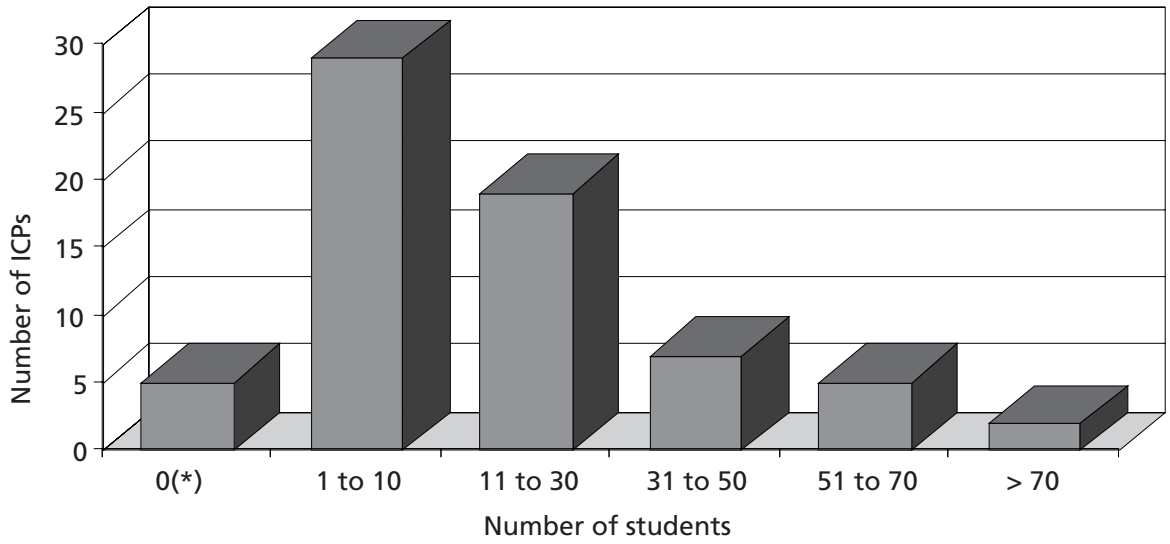
As regards specialised cooperation programmes, a marked development is to be noted in food science and technology (from 16% to 22% of ICPs) and, to a lesser extent, in forestry (from 4% to 6%). The ICPs specialising in agricultural economics have fallen by half (from 14% to 7%).

Little information is to hand as to the origin of the students, but the figures provide further evidence of this trend. In 1991/92 and 1993/94, 50-55% of student exchanges were in multidisciplinary networks (54% in 1991/92 and 49% in 1993/94). Around 20% of them took part in ICPs in food sciences.

The number of students in forestry ICPs is rising (6% of students exchanged in 1993/94), while those in the specialised networks in agricultural economics appear to be declining (8-10% of students in 1991/92 and 1993/94).

Clearly, these statistics do not allow for an extrapolation of trends in the different disciplines, insofar as reference is made here to the priority fields of activity in ICPs within which mobility occurs. There are no statistics on the origins of individual students.

Figure 8. Breakdown of ICPs with respect to the numbers of students exchanged (1993/94).



3. Student mobility

3.1. General geography of exchanges

Two types of data have been used to analyse student mobility: first those relating to forecasts in the applications; secondly, data about actual student mobility which has been gathered by the Erasmus National Grant Awarding Authorities (NGAAs) and processed by the University of Kassel, for the years prior to 1993/94, as well as those provided in the "statements of activities" from coordinators in the case of that year itself.

The number of students in agriculture who were actually involved in exchanges in 1993/94 stood at 1300, amounting to around 0.6% of all European students in agricultural sciences. This figure has grown steadily since the start of Erasmus.

Study of the breakdown (Fig. 9) by country of origin, points to the preponderance of France and Spain, each of which have accounted for over 15% of total exchanges in agriculture. The other countries represent either between 7% and 11% of all mobility, with an average of 10% (as for Germany, Ireland, Italy, the Netherlands and the United Kingdom), or less than 5% (Belgium, Greece and Portugal). Considered together, the EFTA countries account for some 5% of the exchanges.

France, the United Kingdom, more recently Spain, are the **centres** for European exchanges since overall they still take in and send out 49% of European students in agriculture (1993/94), as opposed to over 80% in 1989/90. These three countries now receive and send out three-quarters of all European students.

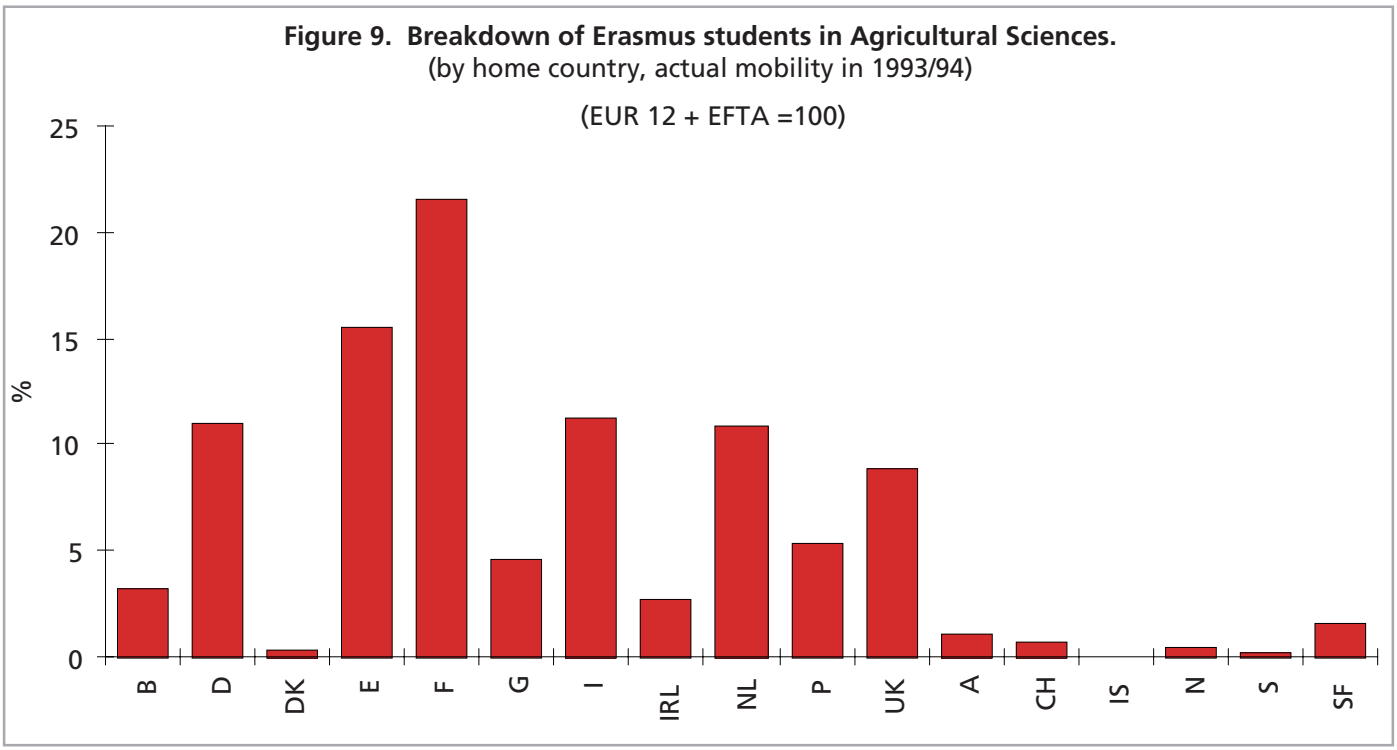
Annual variations in results make it difficult to identify medium-term trends, except in Denmark or Ireland, where the number of students is falling in absolute terms. On the other hand, the number of students seems to be rising more rapidly than the average in Spain, France and the Netherlands.

The main student flows are shown on Maps 1 & 2. The polarisation of exchanges noted in 1990 still exists (RUFFIO, 1990), even if overall, a more active involvement on the part of most countries is observable.

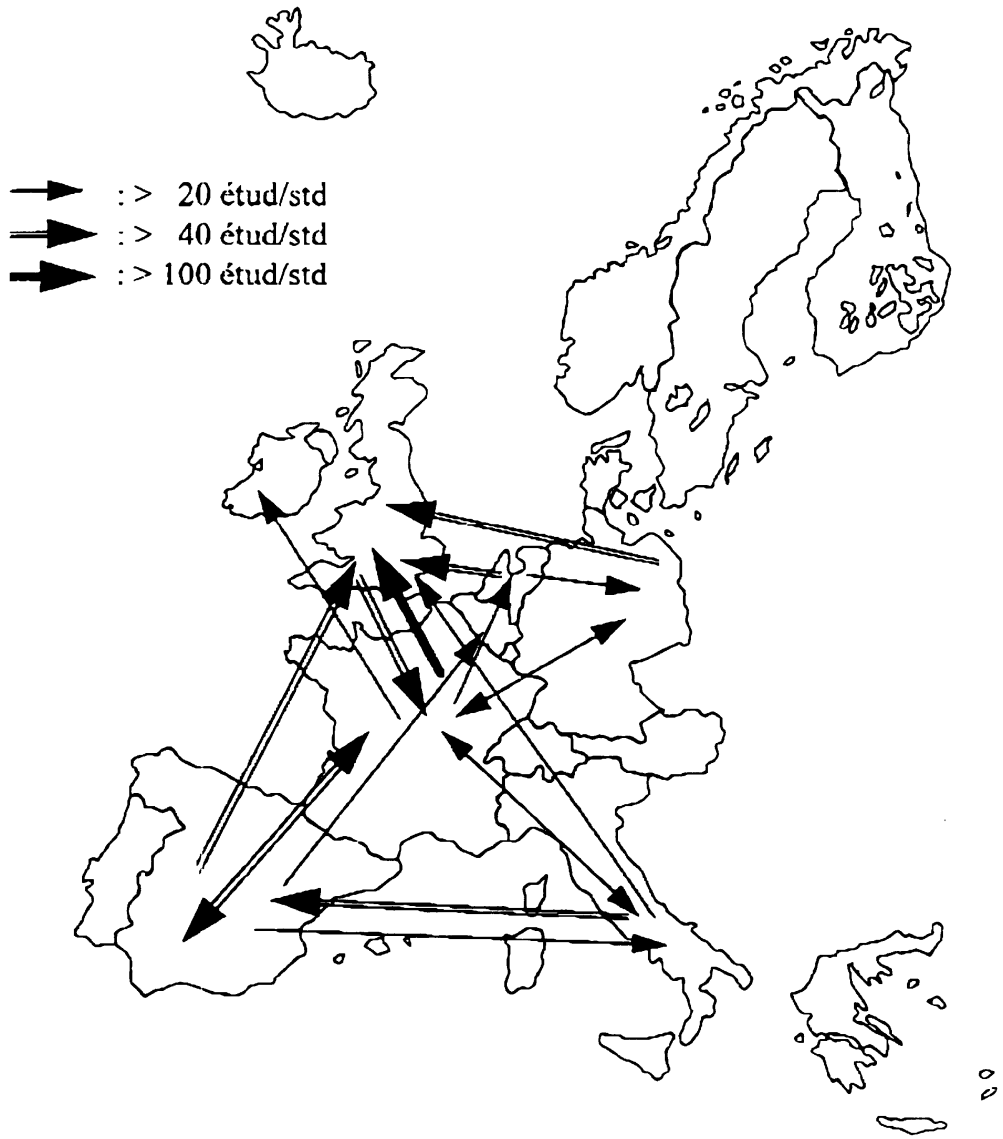
In spite of undeniable progress, **the exchange flows remain unbalanced** and correspond to **certain major channels of cooperation**:

1. The most conspicuous is the **bilateral axis** linking France and the United Kingdom, which represents 13% of total mobility, with 165 students exchanged. These two countries each send 43% of their students across the Channel. The linguistic factor certainly seems to be of central importance here;
2. the second major axis or line of cooperation, is **from Southern Europe towards the United Kingdom**, accounting for approximately 8% of all students exchanged (96). Exchanges between the four countries of Southern Europe (Spain, Italy, Greece and Portugal) represent only 11% of total mobility no more than 30% of students are mobile within this group. Three-quarters of the students from Northern Europe remain within this geographical area;
3. the third channel of cooperation is that of **the EFTA countries towards the northern countries of Europe of the Twelve**. Of all EFTA students, 66% belong to this category, with Germany or the United Kingdom as host countries in 47% of cases.

Figure 9. Breakdown of Erasmus students in Agricultural Sciences.
(by home country, actual mobility in 1993/94)



Map 1. Main student flows in 1993/94 (actual mobility)



With regard to bilateral relations, the central role of the United Kingdom is noteworthy, hosting 27% of European students. It receives 36% of Dutch students, 34% of Germans and 31% of Italians. Of all incoming students to the United Kingdom, 63% come from Germany, France and the Netherlands. If Spain is included, this proportion goes up to 79%.

Italy is another country displaying strongly polarised exchanges, in sending 31% of its students to Spain.

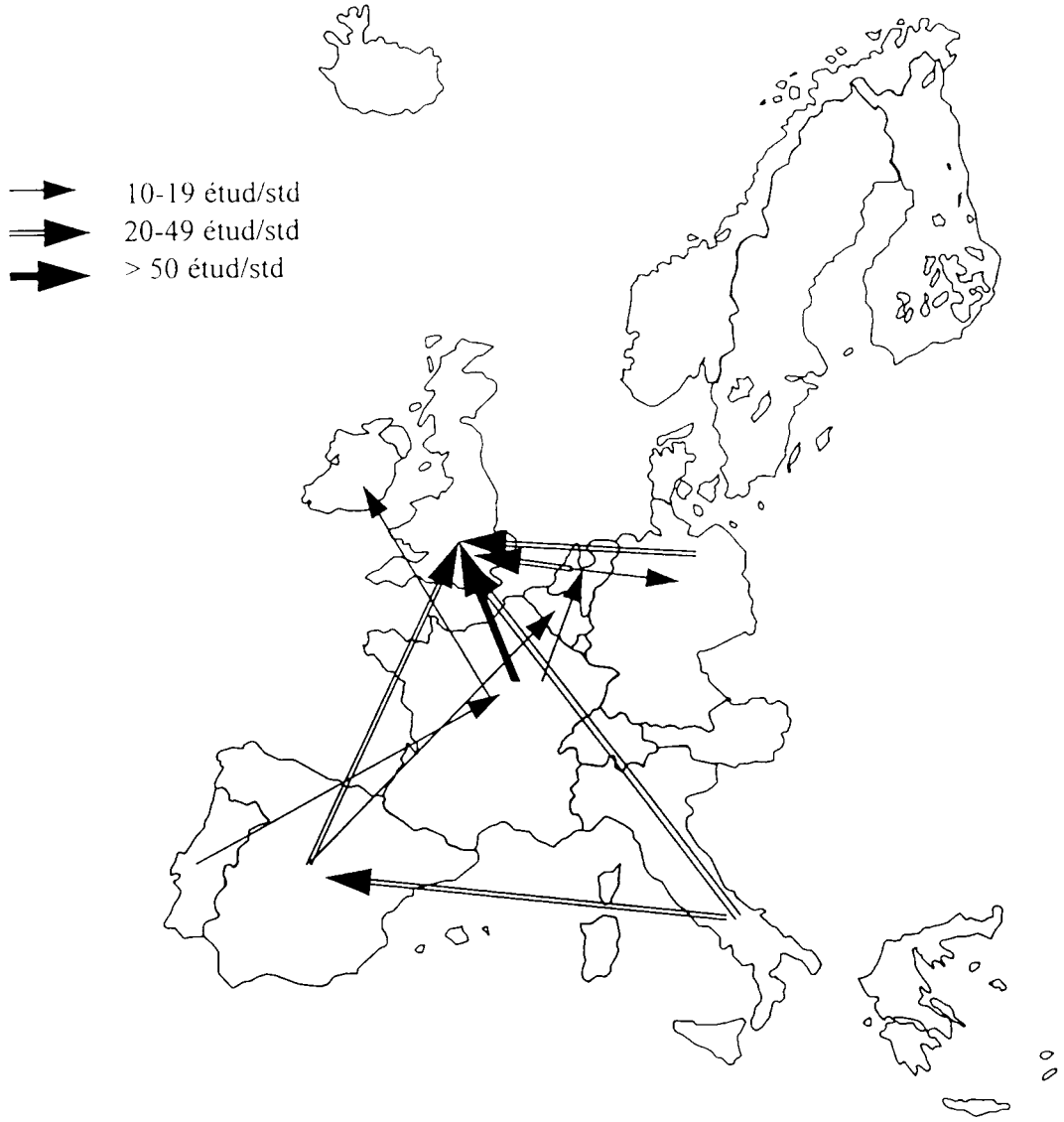
Spain itself is the only large country (with around 200 students sent abroad) which has managed to achieve diversified flows, sending 28% of its students to the United Kingdom and 23% to France.

Table 4 and Map 2 give the balance of outgoing and incoming students by country for 1993/94. The "net importing countries" for student flows are the United Kingdom, Denmark, Ireland and Belgium, as well as Sweden though on a more modest scale. All the remaining countries are "net exporters", in particular, Portugal, Italy and France, in addition to Austria, Switzerland and Finland, though again on only a modest scale.

The United Kingdom's situation is exceptional since this country hosts three students for every one sent abroad. For Ireland, this proportion is two incoming students for every one outgoing. This state of affairs creates difficulties in all the universities concerned, particularly from a budgetary standpoint.

Although most countries have managed to achieve a firm footing within the European network of exchanges, with the exception of the EFTA group where the process is under way, Denmark remains a special problem case. Aside from the fact that its student numbers are falling, Denmark is also the country which has the fewest relations with the others. Among the EFTA countries, Finland is also something of an exception in that it is outstandingly active, accounting for 38% of mobility within the group.

Map 2. Main imbalances in student flows in 1993/94 (students sent minus students hosted)



When the 1993/94 situation is compared with the forecasts available in ICP applications (Table 4), there is a noticeable difference reflecting **optimism in the forecasting of balanced flows**. Denmark, Ireland and the United Kingdom, and to some extent Belgium, end up hosting, rather than sending out, students by margins substantially greater than forecasts would suggest. In the same way, France, Italy, Portugal and Finland are greater net exporters.

Only in the cases of Germany, Spain, Greece and the Netherlands are the forecast balance of the flows and the subsequent reality roughly comparable.

3.2. Take-up rate in the student exchanges

Since the start of Erasmus, exchanges in agriculture have been characterised by a take-up rate (actual mobility as a proportion of forecast mobility) less than the average for the Programme. Roughly one exchange in every two forecast does not take place. Fewer than 30% of ICPs achieve a rate of more than 75%. Almost half achieve fewer than 50% of the exchanges initially forecast.

Interpreting this situation is a delicate matter, since it is the outcome not only of the effort universities invest in cooperation, but the forecasting strategy adopted when applications are prepared[7] and independent circumstances, such as the grant awarding policy adopted by the Erasmus NGAAs.

[7] *It is well known that some coordinators seek to inflate demand, or deliberately try to balance the flows between countries.*

Table 4. Trends in the balance of students flows.

(ratio of students sent abroad/hosted, by country)

Year : Exchanges :	93/94 Real	93/94 Forecast	94/95 Forecast	95/96 All Applic.
B	0.67	0.98	0.91	1.08
D	1.19	1.12	1.00	1.07
DK	0.38	0.98	1.07	1.05
E	1.29	1.11	1.08	1.17
F	1.38	0.98	1.07	0.99
G	1.23	1.17	1.27	1.32
I	1.77	1.17	1.10	1.07
IRL	0.52	0.99	0.95	0.83
NL	1.20	1.19	1.16	0.99
P	1.82	1.16	1.32	1.63
UK	0.33	0.70	0.70	0.67
A	1.75	1.13	1.21	1.41
CH	1.43	1.03	0.98	0.82
IS	-	-	1.50	1.50
N	1.00	0.82	1.12	0.97
S	0.50	0.75	1.00	1.05
SF	4.00	1.44	1.26	1.15

(Ratios > 1 refer to countries which are "net exporters")

Nevertheless, allowing for the fact that extraneous factors may be present to the same extent in all disciplines, there are very strong arguments to suggest that universities cooperating in agricultural sciences have unusual difficulty in achieving their forecast mobility.

Important differences exist from one country to the next. Belgium, Denmark, Ireland and the United Kingdom have take-up rates well below average, if they are calculated with reference to numbers of students sent abroad. The rates are above average for Greece and Italy, as well as Spain, France and the Netherlands. With the exception of Finland, the take-up rate is also weak among the EFTA countries, although this is partly attributable to the fact that their exchanges have begun more recently.

In terms of students hosted, Ireland, the United Kingdom, Greece and the Netherlands have above average take-up rates. With the exception of the EFTA countries where the incoming student forecasts were excessively overestimated, Denmark and Portugal appear to have difficulty in hosting the number of students forecast (only one incoming student for every three envisaged). France, Italy and Belgium are below average.

While the factor is not systematic, it appears as though the bigger the networks, the better their take-up rate is likely to be. The length of time over which an ICP has been operational, on the other hand, seems to be of less significance.

3.3. Main characteristics of time spent abroad

3.3.1. Duration

In agriculture the time actually spent abroad is approximately 5 months (as against the 6 months forecast). As previously, agricultural sciences seem to experience greater difficulty in organising these exchanges since their duration (theoretical or actual) is more than a month less than the Erasmus average, while the contrast between forecast and actual duration is markedly greater.

In fact, the standard time spent abroad in agriculture is from 4 to 6 months for around 55% of students, whereas in other disciplines there are almost as many study periods of 4 to 6 months abroad as of 6 to 12 months.

3.3.2. Activities carried out

The nature of the activities carried out during the time spent abroad also displays a feature apparently peculiar to agriculture. It bears witness to a **very real difficulty** in organising student mobility geared to attendance at regular courses validated on return to the home institution.

Indeed, different types of evidence all tend to demonstrate that on average, most of the exchanges do not involve activities requiring sophisticated academic recognition procedures. The majority of periods spent abroad entail placements, whether in laboratories or in firms, in which a final report is often easily validated as for example: a French end-of-course essay; a British academic project or Master's theses; the German *Diplom Arbeit*; the Italian *Tesi di Laurea*, etc., without recourse to any formally devised recognition process as for regular courses.

- in 1990/91, a study by Maiworm *et al.* revealed that the main activity of students in agriculture involved either a placement (22% of the students, as against the Erasmus average of 3%) or part-time studies (22% of the students as opposed to an Erasmus average of 11%).

  Only 15% of students said they had undertaken full-time study (as compared with an average for Erasmus of 46%). This atypical situation was only evident elsewhere in medicine, a field in which the difficulties facing Erasmus-type cooperation are well-known.

  Similarly, 13 out of 41 hours a week were devoted to practical projects or laboratory work; the Erasmus average is 5 out of 38 hours. With 20 hours, only the natural sciences had a higher ratio. On the other hand, regular teaching sessions stood at only 9 hours a week as compared to an Erasmus average of 15 hours (but with natural sciences also at 9).

  In the same study, 47% of students said that they did not undertake classes in the host institution. This proportion is not reached in any other academic discipline and the Erasmus average stands at only 13%.

- The following year, Maiworm and Over were able to confirm these findings, noting that 44% of student flows in agriculture included a placement in a business, industrial or administrative concern (as against an Erasmus average of 28%). This was equivalent to half the ICPs in agriculture (the Erasmus average is 32%). In this respect, only engineering and business administration were comparable to and surpassed agriculture.

  Such placements abroad were especially frequent for Greek students and for incoming students to Greece, while being also quite common in Belgium and for students from Italy.

  This situation was borne out by the large number of certificates awarded separately or "on the side", whereas the number of actual double diplomas was almost half that of the Erasmus average. Similarly, the number of diplomas obtained abroad was almost five times less than in Erasmus overall, with simple "course and achievement certificates" generally the substitute.

- In 1990/91, the average "training level" of Erasmus student grantholders in agriculture was above the Erasmus average: it was 3.3 as compared to 2.8 years in higher education (Teichler *et al.*, 1992, 1994).

  This feature may be directly linked to the kind of activities carried out, to the extent that the placements concerned are often undertaken at the end of training.

- Finally, the 1993/94 "statements of activities" bear witness to this trend.

It may be estimated that at least three-quarters of the ICPs organise placement activities of "the end of study essay/report" variety, and at least 60% as placements in firms or laboratories.

Regularly provided classes are an integral part of 78% of the ICPs. Fewer than 10% of the networks are reported to organise postgraduate-level activity. However, it would appear that, in general, **placements are the core activity** in almost **40%** of ICPs. **Fewer than 30%** of the networks are thought to place a corresponding emphasis on teaching activity, in the form of regular lectures or classes.

[8] *Including those accepted in the renewal of contracts extending over many years.*

[9] *Excluding from the calculation a totally atypical programme where three teaching staff each went abroad for ten weeks.*

[10] *The proportions total more than 100%, because a given exchange teacher can be involved in courses for students at different levels.*

4. Other activities

4.1. Teaching staff mobility

Teaching staff mobility is an Erasmus activity which has strongly developed in recent years.

Despite budgetary restrictions, the number of accepted applications across all disciplines has gone up threefold from 1988/89 to 1994/95 and the approval ratio now stands on average at over one successful application for every two submitted[8] (as compared to one in three a few years ago).

At present, agriculture accounts for **21 teaching staff mobility ICPs** (as compared with 4 in 1988/89) or around 3% of the total.

The actual number of individual teaching staff members who have been mobile is not high. It reached 59 in 1993/94, which was a 60% rise from 1991/92. In 1993/94, Germany, Spain, France and the United Kingdom were the principal home and host countries.

The average time spent teaching abroad in agriculture is just over a week (1.1 weeks)[9], markedly less than that forecast (1.6 weeks).

These teaching staff exchanges predominantly involve courses for relatively advanced students. In over 90% of cases, some students have already completed their third year; and in almost 50% of cases, some have completed four or more years ("3ème cycle" in French terminology). Young students, those in their first and second years, are taught in less than a quarter of all these cases[10].

The growth in these activities has run into different problems, frequently referred to in the "statements of activities": they include low grant levels; workloads and the problem of finding replacement staff in the university of origin; linguistic barriers and so forth. The priority accorded specifically to teaching duties (as opposed to research) in awarding Erasmus financial support may also explain the lack of motivation among teaching staff for this kind of exchange.

4.2. The development of new curricula

This activity is included in only 7 ICPs. The projects concerned focus on postgraduate training and are almost systematically linked to the notion of "European Master", even if this concept currently remains very ambiguous in the Community context.

There is a very broad spread of agricultural disciplines in these projects; economics and management account for almost half of them but the food industry, forestry and specific fruit and vegetable sectors of production are also represented.

4.3. Intensive programmes

Intensive programmes are a form of activity highly appreciated by both teaching staff and students. However, Community budgetary resources do not enable these programmes to receive anything more than modest funding.

Eight projects involve agriculture. In general, they entail seminars lasting from a week to 10 days, and are for the benefit of postgraduate students or those nearing the end of their training.

The very broad range of agricultural subjects represented includes forestry, the food industries and economics (three programmes).

5. Barriers to inter-university cooperation

Among the sources on which this analysis is based are the "statements of activities" for the 1993/94 academic year and the 1994 self-assessment forms that each institution has had to submit at the end of a long-term contract period.

The former study showed that inter-university cooperation in agricultural sciences had undergone substantial growth since the start of Erasmus and that it had sometimes displayed an above average growth rate.

However in certain respects, it would appear that universities offering courses in agricultural sciences are lacking in ambition when more specific aspects are taken into account, in particular the substantive aspects of student mobility such as the size of the networks, nature and duration of mobility and the procedure for validating periods of study abroad.

From this standpoint, the analysis of the "statements of activities" is unfortunately inconclusive, since it does not really make it possible to suggest specific reasons which might help to explain this situation.

Indeed, the barriers to the development of cooperation which are mentioned in the "statements of activities" refer to very general problems now widely recognised by the Erasmus management team in Brussels.

This approach is not satisfactory in explaining the special situation of agriculture in Erasmus. It is possible to formulate several hypotheses which focus on specific characteristics peculiar to this sector:

a) Institutional structures

Higher education institutions offering training in agricultural and food sciences are very heterogeneous in status, size (modest in several countries) and as regards the authorities which oversee their activities (which may include ministries of education, agriculture or other bodies). Where this diversity does not lead to problems of official recognition, it may nonetheless tend to inhibit cooperation initiatives.

This is why the "non-university" sector (or more specifically technological higher education lasting two or three years) which may mobilise large numbers of students or teaching staff is largely under-represented in Erasmus. Within this kind of course, exchanges usually follow initial training as a somewhat separate element, particularly in the form of summer courses lasting 3 to 4 months.

b) The experience of international cooperation

Universities which offer training in the agricultural sciences have a tradition of cooperation with the developing countries and particularly those with a colonial background. Initiating cooperation with foreign higher education institutions in Europe corresponds to a different kind of logic in which relations are based on a principle of reciprocity and mutual understanding of different training systems.

In other words, universities active in the agricultural sciences face a challenge which involves them substituting the logic of "technical cooperation" for that of a balanced partnership to which the whole teaching strategy of the institution is committed.

By contrast, "non-university" institutions lack this experience and are often situated in a specifically local context.

c) Training projects

Aside from the question of how studies are organised (as national curricula in some countries, etc.), it is clear that different conceptions of training still exist. It is thus understandable that the existence of different training models should have been postulated; one derived from a "physiocratic" tradition more associated with Southern Europe and another "more specialised" model in the Anglo-Saxon countries. These systems reflect an economic, historical, social and technological context peculiar to each country.

In certain respects, the traditionalism and conservatism of European institutions and the teaching profession may also possibly be considered significant. The capacity of institutions to follow-up and consolidate the individual initiatives of the teaching staff who have launched most of the ICPs and to integrate them into their own development policy is far from evident.

d) Entry into employment in agriculture

Employment sectors and the diversity of tasks exercised by those holding formal training qualifications in the agricultural sciences differ widely among countries, especially as far as the relative significance of the public sector, the professions and primary production is concerned.

Furthermore, there are various forms of entry to the labour market. In the southern countries, the profession may be organised as a kind of guild or corporation which may hinder a more open approach or fresh developments in training.

e) The relation between training and the local agricultural and rural context

There are differences in the systems of agricultural production and the way they relate to economic development. Agriculture which is family-based, intensive, capitalistic and collectively organised in the countries of Northern Europe contrasts with that of the southern countries which at present is to be analysed instead in terms of rural development.

Rather than being a source of enrichment, this diversity seems more to be a barrier to exchanges. Indeed, the identity of a significant number of ICPs derives from regional "solidarity" with themes like "Mediterranean agricultural sciences" or "dry regions". Agricultural sciences are applied sciences whose focus is closely circumscribed by their subject matter.

The polarisation of exchanges is indicative not only of linguistic or cultural shortcomings but highlights the asymmetrical features inherent in the development of European agriculture. Traditionally, the northern countries are models of reference and the student flows reflect these preferences.

f) Student demand

There are few factors making it possible to judge the demand for Erasmus activities. However, it is clear that the inadequate mastery of foreign languages (mainly in the "non-university" sector) and the inadequacies of linguistic training do not facilitate student mobility.

Neither should the influence of the socio-professional family context be forgotten especially for students with a rural background. Economic difficulties, the need to keep labour at full strength in family-based farming concerns and the conservatism of the family environment can all limit mobility, especially where they are by-products of crisis in the agricultural and rural *milieux*.

The economic and employment crises are not conducive to an enterprising attitude on the part of students worried about their future. Insofar as end-of-study placements in the home country can be the gateway to the labour market, the reluctance to do them abroad (as is frequently possible in Erasmus) is understandable.

In the same way, the cultural and linguistic benefits so often emphasised by coordinators are not necessarily decisive when the advantages in properly academic or professional terms are still open to doubt.

g) The agricultural and rural crisis

The economic and social situation of an agricultural and rural *milieu* in the throes of transformation no doubt has something to do with the hesitancy of institutions to cooperate. The problem of surpluses, the reform of the Common Agricultural Policy, the calling to question of models of agricultural production and food consumption, the emergence of new technologies and the demographic decline of a population seeking a new social and political identity, are provoking a crisis within the universities and speculation as to whether they may be on the point of decline.

Higher education institutions need to review the principles and directions of training, to develop new areas of investigation such as the processing of agricultural products, product quality, market management, rural development and the environment. In several countries, reforms relating to structures and curricula are in hand.

This sort of context is not conducive to ambitious initiatives and an open drive towards new horizons.

In spite of the foregoing observations, it is nonetheless possible to identify positive elements in the current situation. Among them are the strong growth in the number of students and in a variety of fresh initiatives (including teaching staff mobility and the creation of new curricula), some of which testify to a real determination to forge ahead.

The diversification of student flows has made it possible to achieve more balanced exchanges than at the beginning of the 1990s. With the exception of Denmark, all the other countries are taking part in the exchanges more and more actively. The same applies to the EFTA countries which will nonetheless have to extend their contacts more towards Southern Europe.

The links established within Erasmus have also led to cooperation agreements and new education and research projects (Comett, Tempus, Alfa, etc.). This catalysing effect is making it possible to develop and consolidate networks whose bases are still precarious.

More generally, the internationalisation and "Europeanisation" of the whole agricultural and food sector complex has become a more important factor than in the past, in shaping the demand for graduates. The restructuring going on in the agricultural food sector has led to the rise of large European industrial groups with staff requirements different from those of traditional small and medium-sized firms. For the latter, which are considered a key part of the industrial fabric of the Community, management staff will also have to display a capacity for integration and cooperation at a European level.

Finally, the development, in agricultural and food science courses, of training in business management is encouraging a more open approach to cooperation and an awareness of novel problem areas which, in turn, may revitalise student interest and demand.

6. Conclusion

Agricultural and food sciences are a somewhat **peripheral discipline** in Erasmus, with around **70 ICPs** funded annually and **1300 students** actually exchanged in 1993/94[11] (proportionally representing 2% of all ICPs and 3% of student mobility). Yet the representation of the sector is in keeping with the proportion of students in agriculture in higher education in Europe (2.1%). In 1993/94, some **0.6%** of students within this discipline benefited from mobility made possible through Erasmus.

Since 1988/89, agriculture has undergone **marked growth** in Erasmus with the number of students actually exchanged up by a factor of eight. Because the Commission has been constantly attentive to progress in this discipline, and was especially so in the early years, its development has been comparable to that witnessed for Erasmus as a whole. As far as the number of students is concerned, its development has even been above average.

The average cooperation network consists of **7 institutions** and exchanges some **20 students** for **5 months** (as compared with 30 and 6 respectively for Erasmus overall). It is **multidisciplinary** and priority goes to exchanges in which **placement**s may be organised and, in some cases result in the preparation of an essay or paper on the completion of studies.

In comparison with other disciplines and notwithstanding unmistakable progress with respect to the situation at the start of the 1990s, inter-university cooperation in the agricultural sciences suffers from **structural handicaps** which the future policy of the Commission should take into account:

- **Persistently imbalanced exchange flows** which are concentrated on the United Kingdom and France and along firmly entrenched channels of cooperation: a bilateral French/United Kingdom channel; regular sustained exchanges from Southern Europe towards the United Kingdom, and from the EFTA countries towards the northern EU member states;
- **an under-representation of short-course technological higher education** ("non-university" sector);
- ICPs displaying **little ambition** as evidenced by difficulties and lack of determination on the part of institutions in organising activities within a structured framework (shorter than average lengths of time spent by students abroad, priority given to activities which do not require sophisticated validation procedures, infrequency of truly integrated curricula, etc.).

In the years ahead, the Commission should focus on **qualitative** rather than quantitative aspects. It should encourage:

- Initiatives which make it possible to improve the **academic recognition** of study abroad and attach greater value to the mobility of intermediate students in their third and fourth years of study (the "deuxième cycle" in France), or those enrolled on established courses.

  Given the aims of Erasmus, there is a need to consider more controlled development of periods of study abroad in cases where the aim is only to carry out in-company placements or the completion of a project (involving for example, a short end-of-study paper);
- **the creation of integrated curricula** involving a substantial compulsory period of study abroad, which draw on experience acquired in other fields;
- **the participation of short-course technological higher education** which has an important part to play in agricultural training in many countries;
- **the diversification of student flows** involving Southern Europe and between EFTA countries and the south;
- **a readjustment in the balance** of the exchanges involving the United Kingdom and Ireland which are overwhelmingly "net importers" of students (with three and two students respectively, hosted for every one sent abroad).

  An over-representation of agriculture (given the total numbers) must be accepted in the above countries to compensate for their popularity, in particular for linguistic reasons. Information technology might be envisaged to encourage a more systematic participation of students and teachers from these countries in Erasmus;
- **the participation of Germany, Denmark, Greece and the EFTA countries** which are under-represented, to take account of the number of students enrolled in higher education in agricultural sciences;
- **the linguistic policy** of institutions to encourage the learning of two foreign languages the only way to stimulate and readjust the flows;
- **exchanges of experience** between institutions, which have sometimes yielded excellent results;
- **an in-depth consideration of the specific features** of European training in agriculture and the challenges which it will have to confront at the start of the 21st century.

In a field of training beset by many question marks regarding the future, institutions must realise that by opening up their cooperation in Europe they will be seizing an opportunity to compare approaches, benefit from original shared experiences, etc.. Erasmus is one current means of doing this, with the advantage that it accords priority to teaching and learning activity. The strategies of European cooperation in the field of research and development may also contribute to this end.

The future of inter-university cooperation will depend essentially on the capacity of institutions to be ambitious and the likely means of realising this ambition.

[11] *Estimates point to around 1700 in 1994/95.*

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Final report
Agricultural and food sciences

1. Higher Education in agricultural and food sciences in Europe: an adaptable system[1]

1.1. Introduction

In the past decade, traditional agriculture has been the object of political pressure and public awareness due to surpluses of production, high costs of capital input and environmental problems. These "threats" have an enormous influence on higher agricultural education not only on the financing aspect and the number of students involved, but also on the rate of evolution in curriculum development.

The aim of this paper is an analysis of higher educational systems of various countries in Europe and the evaluation of new needs in education and priorities in agricultural education.

1.2. What is "agriculture"

The basic concept of sustainability in agriculture is the production of food for an ever increasing population while at the same time maintaining soil and environmental quality. Only in recent years have the activities of agriculture been broadened to include new challenges. Therefore, a modified definition of "agriculture" and related agricultural activities is needed.

"Agriculture" can be defined as a combination of:

- Production of raw materials, plant production, horticulture, forestry and wood production;
- animal production, fisheries;
- agricultural economics, management and social studies;
- rural development, landscape management, environment, leisure and tourism;
- agro-industry: agricultural supply industries, food and industrial agricultural industries;
- green production, human nutrition.

1.3. Educational programmes

Currently 2-3% of the total number of students in higher education are involved in programmes in agriculture and food sciences. Due to academic, educational and professional variety and diversity it appears to be rather difficult to compare the various structures of education in the different countries. In addition this variation is also influenced by the structure of the institutions (university – "grandes écoles"), by the administrative authorities and by the nature of professional activities and employment.

1.3.1. Student selection and admittance regulations

The entrance barriers to participation in higher education in agricultural and food sciences are dependent on:

- The level and nature of secondary education, the level of the higher education;
- obligatory entrance examinations organised either by the university, region or country;
- the existence of a fixed "quota" of students depending on the option;
- the existence of a general numerus clausus.

In addition to the more academic route through secondary education there is an increasing demand for linking measures between the different cycles and levels in higher education as well as for a more vocational pattern.

[1] *This section was prepared on behalf of the Scientific Committee, by Prof. R. VERHÉ and Prof. L. MARTENS, University Gent, Faculty of Agricultural and Applied Biological Sciences, Coupure Links 653, B-9000 Gent.*

1.3.2. Diversity of higher education institutions

Differences between higher educational institutions in agricultural and food sciences throughout the EU are observed in respect of the organisational authorities, integrated or independent institutions, size of the institution and the level of academic education.

In the majority of EU countries the organisational authority responsible for the administration of higher education in agricultural and food sciences is the "Ministry of Education, Culture, Science" of central and/or federal government.

Variations of the general rule are observed when the Ministry of Education of the regional government is the organiser and administrator of education in a given region. This situation can lead to differences in the titles of the degrees or diplomas or in the length of study in the same countries.

Great diversity in higher education in agricultural and food sciences occurs in the nature, shape and size of the institutes in the various countries. In some countries there is only one university which is completely specialised in the field of agricultural sciences, with most of the educational and research programmes of the agricultural university being unique and not found in any of the other universities. France represents a unique case in that education in agricultural sciences at the highest academic level is organised by specialised institutions, Les "Grandes Ecoles".

In other countries higher education in agricultural sciences at university level is organised by an autonomous faculty, department or school next to various other departments or faculties within a multidisciplinary university.

Most of the higher institutions offering degrees at a non-university level consist of institutions specialised in agricultural and food sciences and which do not offer general educational programmes.

1.3.3. Degrees and diplomas

Higher education in agricultural and food sciences in the EU offers three basically different options and levels with different minimal length of study, which in most cases are organised by different institutions. The following three categories of higher studies can be distinguished:

- Short term non-university education: 2-3 years of full time study and up to 5 years for part-time students.
- long term university and non-university education:
  - 3 years: B.Sc. at university level;
  - 4 years: professional training at non-university level;
  - 4,5,6 years: university level.
- postgraduate studies: M.Sc., M.Phil., Ph.D.

Short term non-university education

Post-secondary education in agricultural and food sciences for periods of 2-3 years for full-time students and up to 5 years for part-time students is organised in most of the EU countries. These educational programmes offer vocational teaching particularly oriented to practical, technical and professional skills and focusing on the implementation of well-developed technical procedures in professional life. The scientific component is less developed and requires a lower academic entry qualification.

Most of these institutions offer specialised courses, e.g. in agriculture, horticulture, food sciences, rather than multidisciplinary programmes.

Long-term non-university education

Long-term non-university education in agricultural and food sciences involves study periods of 3-4 years as full time students. The curricula are mainly geared to practice rather than principles and scientific research. These institutions are offering vocationally oriented teaching and high level training in specific subjects and rarely concerned with research. Emphasis is mainly on engineering, technological design and business studies. Most of the courses have professional orientation.

Most non-university long-term education is in separate higher institutions which are either multidisciplinary or agricultural.

University education

Education in agricultural and food sciences at the university level is distinguished from non-university higher education by a considerable scientific basis, a multidisciplinary character, description and development of theoretical concepts and research-oriented education. The university education involves 4 to 6 year period of study and results in a degree and/or diploma of Engineering, equivalent to an M.Sc. degree.

1.3.4. Employment of graduates

The labour market for graduates of agricultural and food sciences is rather heterogeneous in the EU and is related to specific labour conditions in particular countries. The nature of the employment market in each country seems to be strongly dependent upon the particular tradition of the country, organisation and structure of agriculture and agri-industry, nature of the educational system, social status attributed to "a title", social origin of the students and the registration requirements of professional bodies. The employment market for "agricultural engineers" is very broad and involves the following activities in the public and private sectors: primary agricultural sector, farming, co-operatives; technical services to agriculture, horticulture and forestry; public administration; teaching and research; banking and insurance; computer science; trade unions, professional organisations; consultancy; agro and food industry, chemical industry; independent professional consultancy.

A comparison between employment and labour market trends for engineers with university degrees and "engineers" with degrees from non-university institutions reveals the following:

- Scientific research, public administration and education are less important for graduates with degrees or diplomas of a lower level. The shorter the study time the less employment is encountered in the public sector;
- self-employment, private farming and business are less important for engineers with university degrees, while the highest levels of self-employment are found in the category of graduates of the short-term non-university educational system;
- technical and commercial activities in agro-industry are important for long-term non-university graduates;
- the labour market for service and consulting activities is increasing in relation to agricultural and industrial production for engineers with a university degree.

1.4. Analysis, priorities and further needs in agricultural education

1.4.1 Introduction

The last twenty years have seen the emergence of a modern and ambitious European agriculture, due to the shifts and developments in the traditional primary production sector. During this period the development of industrial activities in the field of agricultural production and "agro-business" has been observed and agro-food industries are very important pillars of European economy and society. This success has in recent years been increasingly questioned, and the economic, social and technical consequences of this development can no longer be ignored. Policy has changed from one concerned merely with increasing production to one concerned with improvement and control of quality, with sustainable production and land use, environmental care and nature conservation. The number of farmers is decreasing continuously and there is a dramatic change in production methods. Farming has acquired a bad image in various countries because public opinion tends to blame agriculture for its contribution to surplus of production and environmental problems.

This new situation facing the rural world and the agro-food industry is provoking an "identity crisis" in higher education, which now feels an obligation to drastically revise its scientific, teaching and institutional strategies. Therefore, creation of novel educational programmes reflecting the changing demand is necessary to provide the new profile which the future "Agricultural Engineer" will require. In addition a rapid adaptation of university and other educational institutions to the evolution of agriculture appears to be necessary.

1.4.2. New developments in educational programmes in response to changing demand

Currently there are major changes in manpower demands from agricultural labour markets. It is not only a question of quantity (with fewer people in the primary agricultural sector and more people in the secondary sector), but also a question of quality of teaching.

Analysis of the present system

Analysis of the educational system in various countries reveals that three major factors are creating situations of potential conflict in agricultural education: reduction in state finances; the decreasing number of students; and the image of agriculture.

In the past, increased participation in higher education has been promoted resulting in an escalating number of institutions and students. In recent years it has become clear that the system is too expensive and cuts in expenditure and rationalisation are now the trend. In most countries in the EU the number of new students attending university is decreasing and in the most favourable cases, stabilising.

Agricultural education has largely failed to convince students of the perspectives and challenges it can offer, because many institutions have been neglecting the new markets involving socio-economic studies, environmental studies, biotechnology and basic scientific studies.

Novel curricula in agricultural and food sciences - new profiles of the "engineer"

Taking into account the dramatic change in the scientific identity of agriculture during the last decade, four major developments have been observed in educational policy:

- Introduction of methodology to improve the quality of agricultural education;
- development of a new policy for renewing the educational system;
- emphasising a more pronounced interdisciplinary character;
- favouring "generalism" versus "specialism".

The quality of the employment market is entering a stage of significant transition as sectors that were of little impact gain in importance. These areas are quality management, environmental protection, management of renewable resources, use of agricultural products for industrial purposes, planning and supervision of conservation areas, landscape architecture and the planning of urban and rural development at international, national, regional and local levels. A more broadly based education with an emphasis not only on sustainable and safe land management practices, but also on science-production and end-user oriented aspects of land use is required.

Although there is great diversity in the educational programmes in the various European countries, the following common developments are apparent:

- It has been regarded as essential to maintain the basic science element in degree courses in order to train the graduates required by the agro-food sector (both on a research and a commercial basis). This is extremely important in the development of theoretical concepts and the solution of technical problems on a scientific level;
- diversification in course structure and content and extension of non-traditional agricultural subjects in areas such as management, food and nutrition, biotechnology, environment, quality control;
- development of a multidisciplinary and interdisciplinary approach to curricula: the analysis and management of complex biological systems applicable in the fields of management of agro-enterprises, various systems of agricultural and food production, ecosystems, etc.;
- creation of flexibility in curricula, especially in promoting the study of models which are applicable in various fields and the acquisition of working methods for problem solving. The value of encyclopaedic knowledge is decreasing;
- acquisition of diverse skills is regarded as vital. Information and computing knowledge is essential. Skills associated with presentation, the use of audio-visual and graphical aids, verbal skills and independent learning need to be upgraded;
- development of the human qualities will help students to exercise functions with high responsibility: communication skills; adaptation; and organisational capacities. Next to technical competence, social contact and responsibility will be more and more important;
- promotion of a general cultural background, enhancement of social sciences and a good knowledge of languages.

These new trends are highlighted by the following factors:

- A movement towards a broad general background in curricula instead of narrow specialisation;
- possibility for students to develop individual study profiles;
- integration of periods of industrial placement into study profiles;
- promotion of personal student work, especially in the presentation of a project and thesis.

1.4.3. Structural developments of higher institutions

Due to the great diversity in educational systems, it is very difficult to investigate recent developments of the various structures of higher institutions in the different countries. Nevertheless the following developments and actions have been observed: the autonomy of higher institutions to award their own degrees; the responsibility of higher institutions for creating new courses and planning the content of each course; reorganisation of the internal structures of institutions; faculties and departments; cooperation between various institutions; creation of centres of excellence in teaching and/or research and creation of international networks.

In several countries universities have been granted a greater degree of autonomy. Within a legal framework, each university will be able to design its own internal structures. These initiatives will lead to greater flexibility and versatility of operation, enabling institutions to react more quickly and efficiently to changing external trends. Involvement of industrial representatives can be advantageous in the near future.

Flexibility between the university and non-university sectors has been hindered by too many different levels of education. Reforms can be expected during the coming years, enabling students to pass through the entire system from one level to the next higher level.

Another issue involves the transfer of undergraduate credits between universities allowing students to move from one university to another. As various universities are autonomous, each awarding their own degree, a move towards credit transfer would involve reorganisation of regulations and could have financial implications for undergraduate programmes. A problem which applies to several agricultural professional non-university institutions is that of scale and survival. There is an identical problem in countries where several universities are providing similar programmes attended by few students. As many of the agricultural institutions, faculties or departments offer comparable specialisations, the number of students per specialisation can become small and maintaining high quality education may be difficult in the future. In addition, as institutions are financed by the government on a *per capita* basis they are trying to attract more students by introducing new aspects in order to compensate for decreasing numbers in the primary specialisations.

To counteract the effect of financial cuts, decreasing numbers of students in many options and the social, economic and political reforms in agriculture, cooperation between all levels of higher education, research institutions and professional organisations will be necessary. Cooperation in the educational field will establish joint programmes not only with other university and non-university institutions, but also with other departments or universities. The formation of networks has resulted in the creation of regional grouping or centres of excellence. The formation of these groups will increase the cost-efficiency of teaching and research.

Education has been given priority over research in times of economic difficulties. However, high-quality research is necessary to ensure high quality in the long term. Reducing research activity to maintain the amount of teaching will undermine its quality. Collaboration and creation of networks will create an environment for maintaining a high standard of research, while at the same time facilitating more cost-effective course structures and teaching methods. Networks can create conflict situations not only between universities and non-university institutions but also from the viewpoint of certain professional organisations. Cooperation can also be inhibited by:

- Financial constraints: the threat of reduced budgets for individual partners of the network;
- legal constraints: the boundaries of the system have to be transgressed;
- administrative constraints: lack of flexibility and decision making in individual institutions.

1.5. Conclusion

Over the past decade traditional agriculture has been the object of criticism due to surplus of production and environmental problems. This situation has created a rapid evolution in higher education in agricultural and food sciences.

New developments in curricula involve the expansion of subjects and options in which quality enhancement, environmental protection, ecological agriculture and agro-food industries are assuming an important role. A multidisciplinary approach involving marketing, management and social sciences has been developed in order to produce "generalist" instead of "specialist" graduates.

As a result of European exchange programmes, mobility of staff and students has increased dramatically. This high level of mobility necessitates adaptation and harmonisation of educational programmes and improved knowledge of foreign languages.

Decreased financial support and the increasing role of research in education, reinforce the need for the creation of "centres of excellence" to improve, cooperation and rationalisation and the creation of networks. These developments will enhance the quality of "Agricultural Engineers".

2. Innovative measures and actions to be implemented to promote inter-university cooperation[2]

2.1 Introduction

Initially it is important to confirm that those institutions currently involved in activities within agricultural and food sciences under the existing Erasmus programme, consider that there have been considerable benefits arising from the scheme both in terms of academic issues and, more widely, from a general cultural perspective. Furthermore, these institutions are very keen to collaborate in the new developments arising under the Socrates / Leonardo programmes. Whilst some of the measures discussed below would be applicable to any subject area, the emphasis is on those initiatives specific to agricultural and food sciences.

2.2. Courses, curriculum development and training

2.2.1. Content

It is felt that agricultural and food sciences are a multi-disciplinary area, which represents a key strength as those involved in the discipline gain a broad expertise in many other subjects. The discipline group should accordingly take a leading role in the introduction of new courses. Whilst it is considered by all that students of the agricultural and food sciences should have a basic scientific grounding in the discipline itself, there is a definite need to broaden the curriculum. This will lead to increased diversification which, rather than being regarded as a problem in terms of dilution of the existing elements within the discipline, could be regarded more as an advantage in the context of the ever changing needs of industry, commerce and education itself. It is important to note that such diversification is welcomed and supported by students themselves.

"New" subjects could include those concerned with natural resources, environmental sciences, new farming systems designed on more holistic, "green" and sustainable lines, and quality of products throughout the food chain. A major development should be the active role of agricultural scientists in landscape and environmental protection. It is only by managing such systems professionally (which requires expert knowledge of the interaction of agriculture with nature), that they may be preserved to the benefit of all.

Developments in courses should also consider a "European" element wherever possible. Modules should be designed which cover socio-economic issues, marketing, political and policy considerations within a European context.

[2] *This section was prepared on behalf of the Scientific Committee, by Prof. J. WISEMAN, University of Nottingham, Dpt. of Agriculture and Horticulture, Sutton Bonington Campus, Loughborough, UK- LEICS LE 12 5 RD.*

However, there is no reason why agricultural and food sciences should not extend into other areas traditionally seen as having little or no impact on agriculture, but where in fact food production and use represent excellent practical demonstrations of other academic disciplines. The structure, operation and future of rural communities could be of major importance to those studying social sciences. Management of human resources is progressively assuming more prominence. Furthermore many of the developments within agriculture have significant impacts in the context of ethics and moral philosophy. For example, two areas which could be considered are animal welfare/the meat eating debate and the role of genetic engineering in the production of new crops. Many philosophers are using these examples as "working models" for their own discipline and there is accordingly, potential for the involvement of agricultural scientists. All these examples of increased diversification in agricultural and food sciences represent areas where the sphere of influence of academics within this discipline could be increased and widened. It has been suggested that the subject area is suffering from an identity crisis. However, the initiatives considered demonstrate the positive role that members of the discipline could have in general educational matters within higher education. The policy of the Commission throughout Socrates/Leonardo is on thematic networks and encouragement should be given to those initiatives which interpret the "theme" of agricultural and food sciences widely, rather than in the rather narrow and traditional context.

Finally there is potential for more links between the tertiary and secondary sectors in education. Thus agricultural and food sciences could be introduced in a structured fashion into secondary schools. In addition to being an excellent example of the application of basic biological principles to food production and use, such developments would have the additional advantage of advertising the value of the discipline for further study and promoting the image of agricultural and food matters to a wider population. In fact, this public relations image should not be confined to schools but should be extended further.

2.2.2. Methodology/delivery

It should be emphasised that the developments in course structure are not considered as being confined only to those students involved in academic exchanges but should be widened to include all students. However, student mobility is still considered to be of key importance. Under the Erasmus scheme, students typically spend a semester in another institution following courses broadly similar to those taken in their host institution. There is a fundamental need for greater flexibility both in terms of the time involved and the activities undertaken. It is evident that there are insufficient numbers of students involved in exchange programmes who follow courses which are validated by the home institution. It would appear that there are too many "short term" student movements and those simply involved with project work. Accordingly there is a pressing need to develop validation schemes which would represent a genuine attempt to exchange credits between institutions in different countries.

The development of intensive programmes for both staff and students on a specific theme or topics, all with suitable credit ratings, should be promoted further.

Staff mobility should also be encouraged. This would allow pooling of expertise and would stimulate the development of more diverse curricula. It is evident that most institutions within the EU are undergoing major structural changes, driven by both financial and managerial considerations. Previous situations where individual institutions are able to offer a comprehensive range of expertise across a wide range of subjects both in terms of teaching and research, are no longer realistic or realisable and the emergence of "centres of excellence" which are recognised authorities in certain subject areas will become more common. Institutions will have increasing difficulty in providing diverse courses if they are to rely only upon "in house" support and accordingly, the importance of staff exchanges will become greater.

Whilst the value of both student and staff mobility is considered fundamental, the potential for distance learning methodology should not be forgotten. However, this does not simply refer to electronic systems but must also consider other resource materials including texts as teaching aids.

All the above are dependent upon institutions becoming more flexible in their overall approach to teaching programmes; being aware of the different accreditation schemes operating; and being able to award appropriate "credits" for these diverse activities.

The importance of greater links with industry and commerce should be emphasised. This could be in terms of exchange of ideas and expertise but also in the development of a more business like culture within higher education. Work experience with commercial companies of a technical or more applied nature is considered fundamental to the training of those students intending to follow a career in industry. Although it is often difficult to evaluate the constantly changing demands of industry for qualified personnel, such cooperation between industry and institutions could be a valuable means of assisting in the integration of new graduates into the labour market. Furthermore involvement of commercial companies should also include inviting professional individuals into institutions as guest lecturers. These initiatives could be organised though links with the Leonardo scheme and an extension of the ATTEA project which is already attempting to develop such action. Further benefits to be gained from links between industry and institutions could be in the development of continuing education programmes to allow commercial personnel to attend revision or re-training programmes. Thus it can be seen that greater collaboration between institutions and commerce will have benefits for both.

It is evident that in many countries, there is an inadequate appreciation of the complexities of the job market and contacts between institutions and commerce would develop this understanding. The increasing liaison between

institutions and commerce could be extended to consider a European perspective with the ultimate goal of developing a EU-wide job market which would be to the benefit of both employers and potential employees together and, eventually, to the EU itself.

2.2.3. Institutional matters

The new institutional framework is a welcome development as it will lead to more efficient organisation of activities within the Socrates programme. This is also relevant in the light of budgetary constraints. Furthermore the transfer of administrative matters to the institution will relieve academic members of staff of a considerable burden which is an activity that invariably goes unrecognised and unrewarded by the institution itself. It is recognised that the remit of the Commission is certainly not to interfere in the mechanics of higher education within Member States. However the Commission does have a key role to play in the stimulation of cooperation at local, regional and European levels and this role is considered of vital importance to the success of future initiatives.

2.3. Research

Research activities are unlikely to be the central objective of proposals under Socrates (although it is accepted that undergraduate students may well benefit from spending some time in another institution undertaking work which will contribute towards their final project). However many institutions are involved in both teaching and research activities and there would appear to be potential for a more collaborative approach between the various Commission Directorates. Thus DG VI considers agriculture, DG XII handles research while DG XXII is responsible for education. Closer links between the three to identify common areas of interest would appear to be of some considerable potential value.

2.4. Accompanying measures

The exchange of information is becoming an increasingly important topic with the advent of information technology and an initial application could be the ability to access the guide to "*European Education in the Agricultural and Food Sciences*" through the "Internet". Further measures could include the exchange of linguistic resources together with information on the organisation framework of individual institutions which would be of value in providing a more cohesive grouping within the subject.

2.4.1. Language

In an analysis of those areas regarded as being impediments to greater participation in "European" programmes by agricultural and food science institutions, that of language appears to be the most important. The reasons for this are many and include the fact that in many Member States, language training is not obligatory beyond a certain stage in secondary education and consequently, students have rarely taken a foreign language beyond a very basic level. Introduction of language modules for these students in the tertiary sectors are associated with major difficulties including the refusal of institutions to replace a core science module with a language programme, the general unwillingness of language faculties to provide more general language training programmes and the lack of suitable language resources which contain the vocabulary of agricultural and food sciences. Thus language programmes for science students need to be designed on a languages for communication basis, rather than along classic lines and should be adequately resourced with suitable texts and audio/visual tapes. Such developments should also include training programmes for those teachers responsible for these language courses.

It is important to note that another fundamental obstacle to increased institutional contact within the EU is the relatively small number of teaching staff who are competent in another European language. Accordingly, language training for staff (not involved in language teaching) is considered to be of critical importance.

2.4.2. Institutional organisation

The new organisational framework for Socrates is based upon institutional contracts which are to replace the individuality of the Interuniversity Cooperation Programmes under the existing Erasmus programme. However, it is crucial to emphasis that the success of the ICP network has often been based upon the dedication and enthusiasm of individual members of staff within institutions, not the institution itself. There is a very real danger that with institutional contracts, the involvement of those academic members of staff responsible for the success of Erasmus may be diminished. To avoid this possibility it is suggested that institutions convene European Committees whose membership is taken from both academic and administrative staff. This proposal is even more important in those institutions where agricultural and food sciences represent only one faculty and accordingly, are only a small component of overall academic activities. It is not intended to create another layer of bureaucracy but to organise a small and effective group of people who are enthusiastic about the continuation of European links. It is important to reinforce the role of the "faculty" in this context. The development of "departmental" committees within institutions is considered to be inappropriate in that they would probably not have an "agricultural and food science" perspective which is crucial to the future success of initiatives within the overall subject. Furthermore an organisation which is based on a level higher than "faculty" would probably be unaware of the precise needs of the subject.

2.4.3. Student participation

Students themselves should be encouraged to play an active role in the social and cultural activities associated with exchange programmes and should be involved in the integration of students from other institutions into academic programmes.

2.5. Conclusion

It is evident that institutions offering programmes within the agricultural and food sciences are very keen in principle to continue and extend their activities in a European dimension. It is likely that the most effective means of pursuing this key objective is through an official group of individuals representing institutions. Such a group would act as a forum for discussion, would allow effective exchange of ideas, and would be an efficient means of ensuring a degree of complementarity rather than commonality among projects.

Those involved in agricultural and food sciences have demonstrated, through their involvement in previous Commission initiatives and by their own actions, that they are an effective group, able to suggest innovative activities in a collective fashion in responding to the opportunities offered under the new Socrates/Leonardo programmes. The group has considered many initiatives within the general sphere of higher education, but which also have important links with industry, other discipline areas and the secondary sector. These are considered to be worthwhile and the group has the experience, enthusiasm and dynamism to embark successfully on future ventures.

Experience gained from previous EU programmes has confirmed that the "agricultural and food sciences" group as a subject area, whilst covering a broad spectrum of activities ranging from research and specialised technical education through to vocational training, is active and dynamic. It has become an effective forum for debate and a means whereby experiences may be discussed and shared. Production of the guide to *European Education in the Agricultural and Food Sciences* itself, represents a significant achievement which confirms the willingness of members of the group and the institutions they represent to work together towards a common goal. Furthermore by acting collectively it would hope to avoid competition or needless repetition in initiatives proposed. Accordingly the group considers it has the expertise and enthusiasm to advise policy bodies such as the Commission.

The group hopes to be able to reinforce and build on existing additional networks for example, Natura, Silva, Reffeia, Europea, I.A.A.S. and also seeks to stimulate involvement of those countries and certain categories of institutions which are, currently, under-represented within European activities such as the Erasmus network. In addition, the group is not concerned exclusively with EU affairs but is keen to extend its interest into countries of the former Eastern bloc and, on a wider basis, in general global issues.

3. Conclusion: Main recommendations [3]

3.1. General guidelines and policies in the subject area

- **Developing common fundamental guidelines** for training and education in agricultural and food sciences, with the strategic aim of securing the basics of life for future generations through increasing information and know-how on ecologically and economically sustainable utilisation of natural resources;
- **diversifying training**, by taking account of new topics, such as environmental protection, land planning in rural areas, "sustainable" agriculture, food, the quality of agro-food products, etc.;
- **appealing to a wider public**, especially by placing emphasis on continuing education;
- introducing or developing **new disciplines**, in particular in social sciences (economics, sociology, management, ethics, morals, etc.) to take into account the new labour market for graduates;
- encouraging **multi-disciplinary approaches** and methods for **analysing complex systems** in studies (the specific characteristics or original remit of agricultural sciences) and improving **basic scientific training** in order to facilitate professional mobility in the future;
- **tighten the links between teaching, research and development activities** in the rural world (*inter alia* within Commission initiatives);
- support the policy currently pursued in many countries on **restructuring institutions** (by merging, networking, closing down, specialising and organising complementary activities, etc.) encourage institutions to cooperate, including at regional and national level;
- strengthening **links with the professional world** help young graduates into a profession and stimulate the employment market and demand in society (qualitative and quantitative aspects).

3.2. Inter-university cooperation

- Improve **course flexibility** to enable students to have greater mobility and establish much needed validation procedures, in particular using the ECTS model (launch an initiative in the Autumn of 1995); pursue a **quality** oriented policy as opposed to quantity oriented;

[3] *This section was prepared on behalf of the Scientific Committee, by Prof. Ph. RUFFIO, École nationale supérieure agronomique de Rennes, 65 rue de St Brieuc, F- 35042 Rennes Cedex.*

- encourage **development of integrated courses**, especially in new course subjects (the environment, rural world, quality, etc.);
- creating **new teaching material** that builds a European dimension into training, in particular by using new information technology for example, create training modules (with teaching support material, such as handbooks) on the following topics: the diversity of structures and organisation patterns in Europe's agriculture, food chains in Europe, etc.;
- increasing **student exchanges**, by giving priority to intermediary level and postgraduate students. **Increase number** of host countries, by giving preference to Southern Europe and by encouraging exchanges between the new members of the EU and the South. **Urge** Germany, Denmark, Greece and the new Member States to participate;
- foster **contacts and exchanges between teachers** (lectures, seminars, research, etc.);
- guarantee take-up of **non-degree programmes**, which are under-represented.

3.3. Accompanying measures

- Need for **a forum** for universities **to discuss and exchange experience** (for instance: teacher training, quality policy, strategy for integrating Central and Eastern European countries, response to the growing demand of developing countries, prospective reflection, etc.); **reinforce and broaden current networks** and possibly restructure them so as to avoid needless competition; avoid creating an excessive number of initiatives which would be bound to fail due to insufficient means to keep them viable, etc.;
- increase measures on exchanging and disseminating **information** on the training available; such as publicising the guides prepared for the Athens conference to the full by using new technology (Internet, etc.);
- within the universities, help **structure international relations offices** at the most appropriate institutional level, according to the location of the institution's global teaching project for the subject concerned (in general the faculty level, in classical non-specialised university systems);
- underpin **policy on languages** in the institutions, (for students and academic staff);
- encourage and recognise **the participation and role of students**, in particular in social and cultural activities.

Appendix I

List of publications prepared for the Conference

English version:

DOUMA W.H. (ed.), RUFFIO Ph. (ed.), HARDT A. (ed.), *Higher Education in Agricultural and Food Sciences: Guide to courses within Europe*, Interfaculty Committee Agraria, Brussels, 1995, 313 p., ISBN-90-75468-02-4.

DOUMA W.H. (ed.), RUFFIO Ph. (ed.), HARDT A. (ed.), *Higher Education in Agricultural and Food Sciences: Challenges and Prospects within Europe*, Interfaculty Committee Araria, Brussels, 1995, 147 p., ISBN-90-75468-01-6.

DOUMA W.H. (ed.), RUFFIO Ph. (ed.), HARDT A. (ed.), *Higher Education in Agricultural and Food Sciences: Challenges and European Strategies*, (Final report of the European Conference held in Athens, 28/29 April 1995), Interfaculty Committee Agraria, Brussels, 35p. + appendix.

French version:

DOUMA W.H. (ed.), RUFFIO Ph. (ed.), HARDT A. (ed.), *L'Enseignement supérieur agronomique et agro-alimentaire: Guides des formations en Europe*, Interfaculty Committee Agraria, Brussels, 1995, 326 p., ISBN-90-75468-02-4.

DOUMA W.H. (ed.), RUFFIO Ph. (ed.), HARDT A. (ed.), *L'Enseignement supérieur agronomique et agro-alimentaire: Défis et stratégies en Europe*, Interfaculty Committee Agraria, Bruxelles, 1995, 159 p., ISBN-90-75468-01-6.

English/French version:

RUFFIO Ph., MAS i RUE J., *L'Enseignement supérieur agronomique et agro-alimentaire, Higher Education in Agricultural and Food Sciences: Erasmus 1987-1995. Report for the European Commission*, Interfaculty Committee Agraria, Brussels, 1995, 49 p., + appendix.

Appendix II

Members of the Scientific Committee

The Scientific Committee appointed by the European Commission was responsible for organising the Conference and for producing the documents.

Austria	Leopold MÄRZ	Universität für Bodenkultur, Wien
Belgium	Laurent MARTENS Roland VERHE (subst.)	Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen, Rijksuniversiteit Gent
Denmark	Brian DENNIS	Royal Veterinary and Agricultural University, Copenhagen
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Greece	Georges KALANTZOPOULOS	Agricultural University of Athens
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The Netherlands	Boet S. SLAGER	Agricultural University of Wageningen
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VII

Archaeology: Education and Training in Europe

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Erasmus report on archaeology assessment of coordinators' statement of activities (1988-1995)

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1. Introduction

I have been invited to produce some comments on the archaeology ICPs that took place to date. Firstly, I wish to express my gratitude to Dr. Chara Andreidou who produced a very detailed and systematic assessment of all the coordinators' reports [1]. I also wish to congratulate the SIGMA Group of Networks for selecting archaeology as one of the first subject areas for such a debate. It is undoubtly, a good sign for the outcome of the Socrates Programme.

As is well-known, Erasmus is not only about mobility, but mainly about strengthening the links among European universities, possibly reinforcing on a new dimension the transnational character of the old European university. In such a way, mobility of students and staff should not be considered a privilege for a few or as a marginal feature, it is something normal, even a requirement for excellency in higher education. Demographic growth of the universities reduced the percentage of its members involved in such mobility, but its importance has never been questioned, and the increase in the numbers of colloquia, symposia or intensive courses is also a sign of this.

The Erasmus Programme met these considerations and it became an important element for the integration of different academic traditions, for the construction of the European single market of labour in archaeology and for the fight against national prejudice (for which archaeology is obviously a dangerous weapon, since it may operate in both ways).

2. General trends

From all the elements collected in Dr. Andreidou's report, the most significant is that a progressively slight decrease of archaeology ICPs can be observed, which contradicts the European trend. In fact, whereas Erasmus as a whole saw an increase of 250%, archaeology decreased by 50%.

The number of archaeology ICPs is now the same as it was in 1988 (including new universities), decreasing from 1.01% to 0.44% of the whole Erasmus Programme. As a rule, the take-up rate of student mobility in archaeology has been 10% to 20% lower than for Erasmus in general, and the share of archaeology students went down from 0.39% (1989) to 0.29% (1993).

Although there is a strong renewal of networks (only 3 of the 1991 networks lasted until 1994), there is a significant clustering of countries that assume the coordination: 6 countries in 1991, 9 in 1992, 7 in 1993 and only 6 again in 1994.

It is difficult to assess the causes of such a trend. It is natural that, given the nature of archaeology itself, this discipline is one of the first to get involved in pan-European programmes, but perhaps the strong focus on national heritages prevented a faster growth of the networks. It is with no surprise that one may observe that intensive programmes are favoured by many applications, given their flexibility both on content and academic structure. Also, ICPs are a very good way to merge, with caution, diverse national traditions and habits, and to build trust among the various network partners. Therefore, it is unfortunate that intensive programmes were always considered a non-priority from the Commission point of view, although I may also agree that IPs are not a stable solution, and that some "pressure" to generate an institutional commitment from the various universities is also justified.

If one considers the ratio between applications and approvals of programmes, almost all student mobility (SM) applications have been accepted, whereas stronger restrictions were imposed on teaching staff mobility (TS), curriculum development (CDs) and intensive programmes (IPs). This follows a general recommendation of the Commission, concerning the distribution of funds among the four main types of programmes, also explaining, I think, some of the difficulties in developing archaeological networks to their full potential. Archaeology, in spite of having a single name, and a single code, is a cross-road for very different scientific and cultural approaches to the past. TS and IP programmes have the advantage of clarifying the nature of the academic archaeology practised by various partners, thus "breaking the ice" and increasing trust. Networks oriented from the start with a clear subject approach (e.g. field archaeology) were less likely to have difficulties in developing a full ICP (composed

[1] *A copy of the report prepared by Dr. C. Andreidou can be obtained on request from the Coimbra Group office (60, rue de la Concorde, B-1050 Bruxelles).*

of the four programmes). Also, networks that were built upon a longer tradition of cooperation (e.g. pre-existing networks that become "Erasmus", seeing in it the natural accomplishment and reinforcement of a previous trend) are likely to be more successful.

3. What kind of archaeology?

An overview of the various ICPs provides an interesting insight into the nature of archaeological teaching in Europe.

From 1991/92 to 1994/95, the total number of ICPs having archaeology as their main subject was 48, to which must be added 40 ICPs that involve archaeology as their second subject.

Concerning the first group, half of the ICPs preferred humanities, languages and art as their stronger associated subject. About 40% have chosen earth or natural sciences (geology, materials science, biology), and only less than 10% are associated with anthropology. One may assume these links reflect the traditions and dynamics of present day European archaeology, or its main theoretical trends. On the other hand, it is a sign that flexibility should be kept at all times when discussing European curricula, since it will be dangerous either to impose a single view of archaeology or a cocktail of opposed views. As an example: should geology or latin become compulsory courses? The answer, perhaps, rests in the definition of professional qualifications, specified by period and technological skills, rather than only by academic degrees.

Curiously, once other subjects are the prime target of the network, archaeology is preferably chosen by humanities and related subjects (35 out of 40), whereas natural and earth sciences count for only 5 of the ICPs. This element shows that regardless of the fact that teaching archaeology in the university has gained a trans-disciplinary dimension, thus incorporating natural sciences and becoming a discipline of its own, it is still perceived by our colleagues as a mainly humanistic domain (perhaps still as part of history or philology) and at least as something of little relevance to those other subjects. I think that, without loosing its humanistic root, the development of the trans-disciplinary framework of archaeology will become one of prime importance in the future Socrates Programme.

It is a positive sign that most students were free to choose the courses or other activities they wished to follow in their host universities. For various reasons, namely language, evaluation procedures and better contacts with the lecturers, students tend to prefer seminars and field or laboratory work. This is acceptable and even a good move, since Erasmus students should profit from as much "foreign" archaeological characteristics (better revealed in the mentioned activities) as possible. Still, this should be done based on previous detailed agreements between home and host universities, in order to prevent problems of recognition or delay in the completion of degrees.

4. Structural difficulties

One of the poorer results of the archaeology ICPs concerns their geographical distribution.

Concerning student mobility, firstly, some countries have a low (Ireland) or non-existing representation (Luxembourg). Secondly, there is no real balance between incoming and outgoing students: some countries send more students than they receive (Spain) whereas others have the opposite ratio (France, or Italy). Thirdly, only 40% to 60% of the expected SM takes actually place, due mainly to the very low students' grants in many countries (thus excluding namely, students coming from families with a low income). Fourthly, accommodation, bureaucracy and difficulties in academic recognition that occurred in some cases, draw students away from mobility.

The demographic variation among the various countries, the variable academic tradition and its international prestige, the particular monumental richness of some countries (namely in the Mediterranean) and the language issue, seem to condition, in one way or another, student flows. The grants problem is of major relevance, but I will not develop this further, since it is common to all Erasmus networks. Problems of accommodation or bureaucracy could be prevented with a stronger commitment from the universities and the Institutional Contracts are likely to act on this issue. Academic recognition is an almost surprising topic, since it should be solved in advance and must be so in the future.

Teaching staff mobility programmes show a somewhat different picture, with Portugal and the UK leading the mobility. I think this is also the result of the need of the academic staff from these countries to profit from the networks, integrating themselves in European staff intercommunication (be it for a recent history of political isolation, as in Portugal, or of alternative preferred associations, as with the UK and the Commonwealth). But teaching staff programmes must also be viewed as a means of providing a European dimension to many more students than those integrated in student mobility. I have no data on this, but it is likely that the number of students affected by teaching staff exchanges should be at least five or six times larger than of those benefiting from student mobility grants. Teaching staff programmes also enable long term shared teaching, which should be considered a priority in the future.

5. Archaeology and Socrates: Programme, flexibility and prospects

I wish to conclude this report by addressing what, from my point of view, are some of the issues that should be taken into account in the beginning of the Socrates programme.

First, the programme. What is important is not how many students or members of staff one wishes to have involved in the mobility, but to what end. Apart from the more general answers provided by the Commission, on which most of us agree, archaeologists will have their own specific reasons for promoting mobility. Those reasons need not be common to all networks, but must be clearly stated. Socrates is a programme that requires translation into each subject area, since without these subject-related programmes it will be reduced to a collection of financial tools.

Secondly, the management of the networks. The Institutional Contract will, undoubtedly, modify the administrative procedure of the networks, reinforcing the involvement of the universities' administrations.

This will have advantages, but also two major dangers: that administrative bureaucratic concerns take over educational academic priorities in defining the scope of the networks; that archaeology, being a minor academic subject in most universities, becomes "forgotten".

Some steps to prevent these dangers could be taken: to keep the current small networks of specialised exchange alive and, as one of the engines of Socrates, to link educational programmes (SM, TS, etc.) with research networks, thus keeping research at the heart of educational activities; to promote general coordination of different views, as is the case with this Conference; to associate students (e.g. Erasmus students associations) to the management of specific items of mobility, namely by allowing them to run part of the administration; to have Erasmus tutor lecturers.

Thirdly, improved expression of all the European potential. A European framework, coordinating all existing and future activities, will contribute to facilitate the access of any student to any specific domain in Europe, be it of a thematical, geographical or other nature, such as computer applications, the origins of agriculture, the "limes" of the Roman Empire or the Côa valley, which will certainly draw the attention of many scholars and students throughout Europe once it is saved from the dam.

Fourthly, a better geographical distribution of programmes should be encouraged. Students and staff flows should be more even, problems encountered in the past by visiting students should be solved in advance, language study should be stimulated. The role of students in these issues is crucial, since they can take-over many of the requirements to solve these difficulties. On the other hand, automatic recognition based on an agreed frame of criteria (hours, essays, fieldwork, etc.) should be one of the aims of the staff debates to prepare for Socrates.

Finally, academic recognition criteria should be clear, detailed and firm, leaving space for as much flexibility as possible in the contents, but with as strict a scope as possible. Equivalent courses or periods of studies should be defined, as well as the means of registering them in the students certificates. Previous ICPs tend to have an average of 5.85 months of study period abroad and offer a great degree of freedom in choosing the curricula in the host university. I do not see why these elements should become requirements, even if to date they seem to comply with most universities rules.

National Report Thessaloniki Conference (May, 1995)

Dr. Mies Wijnen, NWO/Foundation for Historical Sciences, Den Haag
Chairperson, Scientific Committee Archaeology

1. Introduction

One of the six subject areas within the SIGMA project to be evaluated in the academic year 1994/95 was archaeology. It was managed by a Scientific Committee – under the responsability of the Coimbra Group. This committee was open to universities which are not members of the participating networks, as well as to relevant professional organisations and enterprises. In its final composition it included one member for each country of the EU (including Norway) with the exception of Luxemburg, which does not have an academic curriculum for archaeology; a representative of the European Association of Archaeologists (EAA); and an additional chairperson/coordinator. A Swiss member was nominated as observer (see annex page 15).

Archaeology is a subject area in which many directions are discerned; it is incorporated in different fields of study and degrees may be taken in different areas. These are not the same for all countries concerned. However, since no definition of archaeology has been given in the Erasmus programme, where archaeology is incorporated in the sub-discipline humanities, it has been decided to refrain from giving a definition for this subject area.

1.1. The tasks of the Scientific Committee covered four points:

1. The evaluation of the situation of archaeology in each country of the EU as well as in Norway and Switzerland, with the preparation of 15 national reports – including a description of the national education systems and an evaluation of existing cooperation activities at national level.
2. The evaluation of the impact of the Erasmus programme on archaeology. A junior researcher, Dr. Chara Andreïdou, supervised by a member of the Scientific Committee carried out this evaluation on the basis of the reports (statement of activities) sent every year by Erasmus coordinators and filed at the Erasmus Bureau.
3. The organisation of a European conference open to all European members. The conference was organised by the Aristoteles University of Thessaloniki and took place on May 12 – 13, 1995.
4. The elaboration of proposed future co-operation activities in the field of archaeology.

The discussion at the Conference, in workshops and plenary sessions, was centred around three main topics: the national education systems; new training and activities in a European perspective; the Erasmus and the Socrates programmes.

The national reports, bound in a single volume (in both English and French), were available at the beginning of the conference. They were supposed to serve as a guideline for the discussion in the workshops. All reports contained an assessment of the national educational system, both on an academic as well as on a professional level, evaluation of new training needed and proposals for activities to be undertaken in order to meet these requirements both at national as well as at EU level.

In the end the representative of Denmark had not been able to prepare his national report in time, due to the fact that during this academic year, major changes are being made in the Danish national curriculum for humanities.

2. National education systems

2.1. Introduction

The education systems were discussed at first in three workshops, which were organised according to a more or less geographical system; afterwards the discussion was continued in a plenary session.

As to be expected, the national curricula showed marked differences. It also transpired that during the last decade in several countries, changes had been made in the academic curricula, with a tendency to greater national uniformity/ cohesion and a more concrete organisation of the educational system. For the national reports the Committee opted for a subdivision into undergraduate, postgraduate and Ph.D. level. The subdivision into undergraduate and graduate level is non-existant for Finland, Italy, Spain and, to a certain point, Portugal, whereas in Germany, Austria, the Netherlands and Sweden the undergraduate level does not lead to a diploma. On the whole, the duration of the curriculum for undergraduate and graduate levels amounts to a total of between four and six years. A national curriculum for the Ph.D. level is non-existant for virtually all European countries. The organisation of studies at this stage is in general restricted to the obligation to attend seminars by choice, resulting in a certain amount of credit points. Only in the Netherlands has a kind of national curriculum been developed recently with the creation of the National Research School for Archaeology,

whereas in Portugal a national curriculum is currently in development. Theoretically speaking the duration of the Ph.D. phase varies from two to four years.

2.2. Workshop 1

The discussion in workshop 1 (Denmark, Finland, Ireland, Norway, Sweden and the United Kingdom) made clear that within this group of countries a kind of unity exists, not so much due to the geographical position as to the educational system: they belong to the Anglo-Saxon tradition. It was remarked that in fact the Netherlands belong to this group, rather than to the "Middle European" one. Nevertheless, the organisation of the national educational systems shows large differences and even within each country, between different universities, a large variation can be noticed. All participants agreed that the curricula in general should include field training courses and that they should allow students to attend specialist courses elsewhere and obtain full credit for it. These courses do not necessarily have to be of a long duration, such as a semester or a whole year. For some specialist subjects intensive courses of 2 to 4 weeks might prove to be very effective as well. On the other hand, all agreed that rather than sending students on exchange, in some cases it might be more efficient to have a larger group of students profit from specialist courses by means of staff exchange.

The experience with student exchange was very different. One of the problems signalled was the language barrier. Within a region this problem does not exist and students find it easy to adapt to local curricula. Moving out of or into a region, there is a rather high language barrier. One of the conclusions was that student exchange works best at graduate and Ph.D. level.

2.3. Workshop 2

In workshop 2 (Austria, Belgium, Germany, the Netherlands and Switzerland) it was recognised that the curricula were different for all countries concerned, but that in the end they all concerned the same fields of study. From thereon the discussion focussed on the possibilities for a European exchange to exist within the national curricula. Field training was judged to offer good possibilities for exchange, especially since in this case the language barrier should be less of an impediment. However, for credit recognition it was felt that the training should take place in an academic supervised excavation. For that reason it was proposed to create an (electronic) international calendar of field activities, in order to be able to decide where to send students. On the other hand the importance of attending specialist training courses was stressed, either as intensive courses or as a longer programme. This should not be restricted to just sending students to other countries; specialist courses could also be provided through staff exchange. In this respect it would be useful to have "guest courses" as part of the curricula. All participants agreed that there should be more possibilities where professional training is concerned (restauration, heritage management, museology, etc.). It was recognised that so far, the major problem has been the obligation of having to work within the framework of the "official" scheme of each country. To create an efficient system of European specialist courses and field work training, it would be necessary that on the one hand the system of credit transfer is recognised nationwide while on the other, national curricula should include/provide room for these type of courses on a "European level".

2.4. Workshop 3

In workshop 3 (France, Greece, Italy, Portugal, Spain) it was noticed that, although in general archaeological studies are considered as being academic, in Portugal there has been an attempt to introduce archaeology into high-school training.

In the discussion it became clear that the actual trend in these "southern" countries is to distinguish two levels within the education system. The first leads to the essential degree – and is devoted to field archaeology and heritage interventions. The second leads to the higher degree. It was felt as a general need, that courses developing new trends in archaeology should be included in the academic curricula. All agreed that more attention should be paid to heritage management; special training in this subject is certainly required. Another topic to be discussed was the training of new researchers. It was recommended that students at graduate and Ph.D. level should be abled to attend specialist courses abroad.

2.5. Plenary session

In the plenary session it soon became clear that, despite the differences in educational systems, the gist of the discussion in the three workshops had been largely similar. The debate in plenum could therefore be centred around the major issues: field training; specialist training: the transfer of credit points; and the flexibility within national curricula.

All participants agreed that field training should be included in the curriculum of all fields of archaeology, not just in the field of pre- and protohistory, as unfortunately is still the case in several countries of the EU. In the discussion it was recognised that it would be of profit to both areas if "southern" European archaeologists do field training in northern countries and *vice versa*. Moreover, since the professional market will become more open in the very near future, students should obtain better knowledge of all the different aspects of field work, be it excavating or surveying. The proposal for the creation of a (electronic) field work calendar was warmly applauded and got the support of all the participants. There were some doubts over the suggestion that such a calendar could be operated within the framework of the database which is now being set up by the European Commission; a very specialist calendar like this would be of practical use only if it is updated regularly. It is doubtful whether this is really possible in a large, general universitary level framework. A specific archaeological network was felt to be more useful in this respect.

The importance of allowing graduate and Ph.D. students to take specialist courses elsewhere was underlined by all. However, it was generally recognised that, for expensive courses in particular, funding can be a problem.

In general, funding until now seems to have been only

possible on a basis of cooperation and reciprocity, the latter will not always be possible in a relatively small scale subject area like archaeology. The differences in cost of living between countries might also cause a problem. One of the other issues to be discussed was whether curricula have the amount of flexibility to allow students to take specialist courses abroad. Here opinions differed. Although most countries have in general a rather rigid system, several still have enough flexibility to allow their students to go abroad, and obtain full credit, whereas in other countries this seems to be far more difficult. The dissimilarity of credit systems was recognised to be a major problem. It was also discussed whether it would be absolutely necessary that all courses followed on exchange, be it field training or specialist courses, should be translated into credit points or whether they simply should count in the curriculum vitae. Here again opinions differed – though in general, with the national systems becoming more strictly regulated, it was considered to be feasable to have specialist courses included in the programme as credit points.

2.6 Conclusions and recommendations

The three workshops and the plenary session discussions led to the following conclusions and recommendations:

1. Field training is very important and should be included in the curricula of all fields of archaeology.
2. The curricula should allow students to attend specialist courses abroad and give full credit. Also, students should have the possibility to attend expensive courses (laboratory etc) abroad.
3. Exchange programmes should include the possibility to attend intensive specialist (and field training) courses of a short duration (2 to 4 weeks).
4. Student exchange works best at graduate and Ph.D. level.
5. There should be more flexibility and freedom within the system (e.g. free movers).
6. There should be language training support for students.
7. More attention should be given to staff mobility.
8. At European level, archaeology should be recognised as an interdisciplinary subject with its own identity and research goals.

3. Erasmus and Socrates programmes

3.1. Erasmus-report

During the conference, Dr. Luiz Oosterbeek presented a synopsis of the Erasmus report on archaeology as prepared by Chara Andreïdou. He sketched the general trends. The most striking point is that a progressively slight decrease on archaeology ICPs could be observed, which contradicts the European trends.

He also commented on the fields of archaeological training involved in the programme. These reflect the traditions and dynamics of European archaeology as well as its main theoretical trends; he remarked that students for various reasons, namely language, evaluation procedures and better contacts with the lecturers, tend to prefer seminars and field or laboratory work. This would also be the way in which students should profit most from specific archaeological knowledge elsewhere. In his comments Dr. Oosterbeek also mentioned the structural difficulties. He noted a problem with geographic distribution: student flows are influenced by unavoidable aspects, such as demographic differences between the various countries, the variable academic tradition, its international prestige and the particular archaeological/ monumental richness of the Mediterranean countries, but also by difficulties in academic recognition, the language issue, the grant problems, accomodation and bureaucracy. The latter causes could all be prevented or solved in some manner. He stressed the importance of teaching staff mobility programmes since these are a means of providing an European dimension to a far larger group of students than those integrated in student mobility. In his conclusion, Dr. Oosterbeek gave the following recommendations to be taken in to account in starting the Socrates programme:

1. The field of archaeology has its own specific reasons for promoting mobility. These reasons need not be common to all networks, but should be clearly stated, as **a programme**. Socrates is a programme that requires translation into each subject area, since without these subject related programmes it will be reduced to a collection of financial instruments.
2. **A European framework**, co-ordinating all existing and future activities, will contribute to facilitating the access of any student to any specific domain in Europe, be it of thematical, geographical or other nature.
3. **A better geographical distribution of programmes** should be encouraged and the students and staff flows should be more balanced. Problems encountered by visiting students in the past should be solved in advance. Language study (particularly of the less spoken ones) should be stimulated.
4. **Academic recognition criteria should be clear, detailed and firm**, leaving space for as much flexibility as possible in the contents, but with as much a strict scope as possible. Equivalent courses or periods of studies should be defined, as well as the way of converting these into students certificates.

The discussion afterwards was short, since all participants agreed with Dr. Oosterbeek's recommendations; in fact, several of the problems had already been signalled during the discussion of the national education systems.

3.2. Introduction to Socrates

Dr. Irving Mitchell presented the Socrates Programme, illustrated with some very informative transparencies. After sketching the outlines of the entire Socrates framework, its

aims, the duration and the funding involved, he went more closely into the Erasmus part of the programme. He explained that the two pillars on which Erasmus will be based are the following:

1. Promoting physical mobility;
2. Enhancing the European dimension of studies.

One of the major changes in the programme is the institutional approach. In the future, institutions will be responsible for everything. Instead of having different ICP contracts, within the Socrates framework there will be one contract per university for all its activities. The intermediary between the partners in a contract and DG XXII is the institution, no longer the coordinator. Another innovation is the thematic approach – the creation of thematic networks. The Socrates framework is looking for thematic or discipline cooperation in order to stimulate the discussion in Europe on a discipline and/or educational issues in a discipline. The discussion should take place on a large scale, e.g. between faculties, institutions and professional organisations from a larger part of Europe. The thematic approach however, should not replace the ICPs.

A third new element is the regional approach. This would include the joining of actors in the region (external funding) in educational activities within the framework of an institutional contract.

Dr. Mitchell explained that within the institutional contracts the important elements of the original Erasmus Programme will be continued. Activities within the contracts will include:

- Organisation of Student Mobility;
- Introduction and implementation of a European Credit Transfer System (ECTS);
- Teaching staff mobility:
  - of short duration;
  - selective teaching fellowships of medium duration;
- Intensive programmes;
- Preparatory visits;
- Joint curriculum development activities comprising:
  - development of university courses and course units at initial or intermediary level (undergraduate);
  - development of university programmes of study at advanced level (postgraduate);
  - development of European modules.
- Development of integrated language courses.

He explained that, since the Socrates Programme is starting with a delay, 1996 will be a preparatory year for the institutional contracts, in order to be fully able to start the Programme in the academic year 1997/98. He promised that guidelines will be available as soon as possible, whereas full applications will be launched in May 1996.

This introduction was followed by a lively discussion with many questions, especially regarding the institutional contracts. Although these contracts are meant to diminish the bureaucracy involved (which was often felt as being one of the major impediments in the old Erasmus Programme), the fear was expressed that this structure would create another bureaucratic problem, instead of solving it. Some participants were afraid that smaller groups might have far less possibilities in this new framework than they had with the original ICPs. On the other hand a lot of interest was expressed in the possibilities of creating thematic networks – although it was not yet entirely clear how the operation of these should be achieved. From DG XXII, it was mentioned that a meeting would take place in July, in which representatives of the SIGMA networks' scientific committees would receive more information on the thematic networks; moreover it was stressed that applications should be made with one voice.

4. Archaeology in europe towards the future

4.1. Introduction

In his introduction on the future of archaeology in Europe, as seen by the professional archaeologist, Prof. Dr. Kristian Kristiansen mentioned that some paradoxes existed in archaeology of the 90s:

1. National archaeology is the framework of most activities, whereas the research objectives want and need to be international. One of the causes of this situation are the national legislative frameworks.
2. There is an inbalance between the increasing numbers of rescue excavations/reports and the lack of research to transform the data into historical knowledge. The resources for rescue archaeology are becoming more and more extensive, due to conservation legislation, but there is only a little money for research. This produces a large surplus of dead archaeological information - at the most, a data mountain.

He remarked that the last 25 years have revolutionised archaeology in many countries; the developments have been fast and in many cases professional archaeologists are still learning to adapt to these new possibilities.

By now there are several frameworks which may help to overcome some of the aformentioned problems, such as the Malta Convention on the Protection of Archaeological Heritage, which links in fact research and rescue; European Programmes like Erasmus; the research programmes of the ESF and the European Association of Archaeologists, which promotes the cooperation in the protection of European Cultural Heritage.

These frameworks however, need to be developed. It was with this goal in mind that Prof. Kristiansen formulated the following **proposals**:

1. In terms of rescue and research there is a need to develop new strategies integrating the production of knowledge into the framework of rescue archaeology in Europe. This can take several directions and may also include access to information through national registers, an analysis of the whole process from planning through excavation, storage to the production of knowledge, publication policies, the role of universities, etc. The research programme could be based mainly on graduate and Ph.D. research.
2. The Archaeological Heritage and the role of the past in the present should be dealt with in a more systematic fashion. A network, including seminars based on concrete case studies, should be formed throughout Europe to secure a humanistic and responsible use of the past in the present. This could be organised in cooperation with the EAA.
3. Information technology and archaeology. A strategy for the use of information technology in the management of Cultural Heritage should be encouraged.
4. Integration with the former Eastern Europe. Social and economic conditions in former Eastern Europe present some real constraints for scientific interaction. A strategy should be developed with concrete proposals to improve scientific cooperation in archaeology. This could be done in cooperation with the EAA.
5. Bronze age network. It would be a good idea to strengthen the Bronze Age Campaign of the Council of Europe by developing a scientific network/seminars dealing with technology, European interaction and cultural traditions during the 1st and 2nd millennium BC. It would be productive to link it to Erasmus/Socrates doctoral seminars and exchange programmes.

At the end of his introduction on behalf of the EAA Prof. Kristiansen invited the Scientific Committee of the SIGMA project on archaeology to hold a round-table discussion at the annual EAA meeting in Santiago de Compostella in September (1995).

In his short introduction on the future of archaeology (presented by Prof. Dr. D. Pantermalis), Prof. Dr. Y. Tzedakis represented the point of view from the Greek Archaeological Service. He signalled that archaeology is often taken up as a study with a kind of ideal. When they finish their academic education, young archaeologists have good general knowledge, but not the practical experience which is needed so much. Entering the Service one comes face to face with the harsh daily life of (mainly) rescue archaeology, insufficient financial resources, dealing with un-cooperative contractors, city councils, citizens and farmers and lack of time to do sufficient research on the archaeological data in preparation of a publication. Although he did not offer a proposal to solve the problem, it was felt as a plea for better professional training, or at least for better general understanding between the academic world and archaeology services.

In the ensuing discussion the question was raised whether the Archaeological Service itself could not do something to improve the situation. Until now, the entrance exams for the (Greek) Service are largely based on "art historical" knowledge. It would seem more logical to require that young archaeologists, willing to enter a state service, follow a professional (In-Service) training course and obtain good results, including issues such as (heritage) management and legislation.

The question was also raised as to what extent could Prof. Kristiansen's proposals be used in the implementation of the Erasmus and/or Socrates Programme. In his answer Prof. Kristiansen said he considered that the implemetation of the programme was so important that it should not only be accessible to universities but also opened to state services and museums. Dr. Oosterbeek pointed to the fact that all issues raised from an academic point of view need a large expertise. It would be very good therefore, if several of the proposals could be included into the academic system. At this point the factor time was recognised as the conflicting element between academic and vocational training. At present, the educational system only allows the time to train good professional archaeologists who are prepared for their role in society. Vocational training has to follow afterwards. As most of the national reports show, there is certainly room to improve on this aspect; at least part of the vocational training could be provided by postgraduate courses at European level.

According to the floor, several of the issues mentioned by Kristiansen seemed to offer good opportunities for the creation of joint programmes within Europe; a fact which might rehabilitate the programme.

4.2. Workshops

The Conference programme was to continue with five workshops on themes closely related to the future of archaeology in Europe. The results of these workshops were to be discussed afterwards in plenum. However, for one of the workshops, "Changing Employment Perspectives", the attendance was rather small (due to the fact that the other themes were found to be more interesting in relation to Erasmus/Socrates); it was therefore decided that the introduction and discussion on this theme would be postponed to the plenary session.

This synthesis is largely based on the reports, as presented by the rapporteurs during the plenary sessions and the ensuing discussions.

4.2.1. Workshop I – Introducing the European Credit Transfer System (ECTS) in archaeology

As the title indicates, this workshop was meant as an introduction to ECTS and a discussion on problems which are to be encountered with its implementation.

The rapporteur, Mrs. Carolyn Campbell showed with an informative series of transparencies what ECTS involves. It is based on a system by which the total of courses followed and

passed in one academic year equals 60 credit points. This requires an agreement between universities. She explained that the key documents involve information packages, students application forms and learning agreements. She pointed to the fact that all necessary information can be obtained from the national ECTS promotors/officers and that a full list is available on the Internet (gopher://erasmus.ulb.ac.be).

During the workshop, discussion was centred on the diversity in national crediting systems and how to make these compatible. Other issues of discussion were the diversity in curricula and how to make courses fit within the different structures; the different methods of teaching and learning; subjects and disciplines; and assessment methods.

In the discussion in plenum the question was raised whether there will be financial support for ECTS. Dr. Mitchell answered that ECTS is an essential point in the new Socrates Programme; there will be support to develop ECTS within institutions. The Swiss representative remarked that he felt rather unhappy that at present Switzerland will not be allowed to take part in the system. Due to the political situation it has only the role of observer, despite the fact that it contributes to the financing system of the Programme.

4.2.2. Workshop II – Postgraduate specialist interdisciplinary training

During the workshop, Dr. Clifford Price presented the introduction on this topic. He indicated that the present generation of "archaeometrists" either have an archaeological training with additional science courses or a training in pure science with an additional archaeological degree. He mentioned that, although at the moment more and more people are studying archaeological science, the field has not yet been clearly defined. In his opinion the best solution seems to be interdisciplinary training – and this would be the area where the Erasmus/Socrates programme could be of help.

The participants of the workshop acknowledged that in the present situation, and moving towards the 21st century there is a great need to interprete archaeological data/finds in a modern way, using the best methods available. At the same time it was recognised that for financial reasons it is impossible to have all specialisations available in every institute; on the other hand it would be impossible for every archaeologist to have a profound knowledge of all specialisms available. However, one of the very important point is that there should exist a good communication between the archaeologist and the scientist. This is an element that should be included in the training of both archaeologists and archaeometrists.

It was concluded that there is a variety of levels in interdisciplinary training – with on the one hand short intensive training, while on the other, longer specialist training. Short intensive interdisciplinary training courses for graduate or Ph.D. students could be organised in e.g. European summer schools, more or less according to the scheme of interdisciplinary courses organised by PACT. A requirement would be that full academic recognition is given.

Regarding longer specialist training, one has to keep in mind that some disciplines are considered as specialist training for archaeologists, but that others are special fields of study. The participants of the workshop agreed that a (thematic) network should be developed between institutions, in which the training of students could take place and international courses could be given on a regular basis.

In the discussion in plenum it was signalled that one of the problems with a network could be the reciprocity principle. It was questioned whether a thematic network would be restricted to the participating institutions or modules in the network would be open also to students or groups from other universities. It was indicated that the intention in the creation of thematic networks is to have a very broad forum; there should be sections and subsections for discussion. Although various institutions are taking part in specific postgraduate courses, it will be necessary that they come with a single voice for the proposal of a network.

Another point raised was the fact that the opening up of specialist training courses in certain institutions might cause a strong increase in demand, which would create a financial burden for the institute involved, since it would require an enlargement of capacity; there should be complementary funding provided.

It was decided to make the following recommendations:

1. The development of a thematic network for specialist interdisciplinary training should be promoted;
2. a system of short intensive postgraduate interdisciplinary training courses should be developed.

4.2.3. Workshop III – Electronic systems and communication

The discussion in the workshop was centred on computer applications in learning. In the plenary session the following very clear report and proposal were presented.

Background

The use of electronic systems in teaching will serve important practical and political ends. The employment of new technologies provides an important linkage between integration (based on common high standards, required by the Malta Convention) and diversity (drawing on the reciprocal contributions of the individual cultural traditions of the Member States).

The practical advantages include:

- Enhancement of the quality of teaching:
  - granting the student control of time, pace and location of the instruction;
  - bringing the course to the student;
  - removing tedious repetition from teaching;
  - permitting rapid updating of information;
- low cost;

- support to the wider remit of Socrates:
  - familiarisation prior to mobility of student;
  - increasing flow of teaching even in absence of student flow;
  - inclusion of schools;
- rapid transfer of information;
- pooling of expertise;
- sharing of diversity;

The political advantages include:

- Production of a European system complementing the transatlantic/Anglophone one;
- raising of interest and advertisement to near neighbours of EU (South and East).

Implementation

To set up a Europe-wide pool of software resources for teaching and associated documentation. This would include three elements:

- Core modules on methodology common to teaching in all countries;
- modules on regional archaeology, produced in the regions and illustrating diversity within Europe;
- new European modules on thematic issues covering the whole of Europe such as heritage issues or archaeology and nationalism.

Details of the resources would be available on the Internet using World Wide Web technology and the resources could be downloaded by any teaching institution by electronic transfer (ftp) from a server, saving dissemination and publication costs. Resources could be updated, altered or translated as required.

The above proposals need the following support to become reality:

- A network of European archaeologists to advise on areas to be developed, on standards, carry out evaluation, etc..
- New modules to add to those already produced in the UK and modifications of UK modules to remove copyright restrictions which prevent distribution to Europe at present.
- Translation facilities for reciprocal translation of modules into appropriate languages.
- Central administration for coordination of development and WWW/ftp site setup, maintenance and support.

During the workshop interest was expressed by participants from Greece (Thessaloniki), Portugal (Algarve), Ireland (Dublin), Sweden (Gothenburg) and Holland (Leiden).

The participants in the plenary session had no questions, but gave their full support to the proposal of setting up a European network of electronic systems in teaching. It was suggested that the system should contain a module on the organisation of archaeological field work (who gets permission for field work; are there funding regulations, etc.), conservation of archaeological monuments, legislation, national archaeological service, etc. for all countries of the EU.

4.2.4 Workshop IV – Changing employment perspectives

As stated earlier the workshop itself did not take place. This did not prevent a lively plenary discussion. In a short introduction by Jose d'Encarnaçao the following four themes were mentioned:

- What is an archaeologist? Also from the point of view of local and national administration;
- which is the present vocational occupation of archaeological graduates and if in archaeology, is it temporary or permanent?
- is the archaeological vocation exclusive?
- as a result of the Malta Convention (and other conventions), construction work contracts are issued, to universities and state services, but in several countries also to commercial excavation firms.

Although it was recognised that two kinds of employment outlets exist for graduates in archaeology (as professional archaeologists or as non-archaeologists), it was decided to centre the discussion on the professional aspect, since that had been the reason for proposing this workshop. It was remarked that it is not easy to predict the situation of employment beforehand (due to the fact that students starting now will graduate in about six years). It could not be denied that academical positions seem to diminish in most countries, but on the other hand it was noted that a fair number of the present generation of students have a strong interest in archaeology and society. It was recognised that with the implementation of the Malta Convention, several countries might be confronted with a lack of capacity: a lot of work could be developing, which by all rights should also include the making of reports and post-excavational/field research.

With the disappearance of European boundaries there might be employment for archaeologists outside their own country as well. In this respect it was noted that at a European level an initiative should be taken to facilitate the movement of professional archaeologists throughout the community. At present there is often a reluctance on the part of employers to accept qualifications from abroad, simply because there is a lack of knowledge of the standard achieved to get it. A guide outlining various standards involved and available to institutions in each of the Member States would solve this problem very efficiently.

It was recognised that there is a great danger in the privatisation of archaeological research – a danger which could be prevented. As the situation is now, in several countries private archaeological firms are allowed to do archaeological (rescue) research before contractors destruct a site, but the contracts do not provide the money necessary to properly evaluate the data retrieved from the excavations. The meeting

agreed that this is also a political and economical problem. Archaeologists, whether employed in universities, state service or museums, should unite and endeavour to change the attitude of politicians and contractors, so that rescue work can be carried out properly, with the necessary evaluation. It was proposed that a (European) charter be drawn up, describing the requirements of the professional archaeologists with regard to rescue operations. If "commercial archaeology" is introduced in Europe, the links with the academic world should not be broken, on the contrary, they should be strengthened. A European cooperation in e.g. environmental studies, archaeometrics and other interdisciplinary studies should be planned.

The meeting concluded that, although the employment perspective might change, to all appearances there is a future in archaeology.

4.2.5. Workshop V – The role of field archaeology

During the workshop it was concluded that only for a surprisingly small number of countries is field training obligatory in the curricula of all fields of archaeology; in several it is obligatory only for prehistory, while in other countries, not at all. The participants in the workshop wanted to emphasise the importance of field archaeology in an international context. Firstly, it was recognised that participation in field work in an international context provides increased knowledge through the widening experience, not only of different field circumstances and excavation methods, but also by discussion with other participants. Furthemore, this increase of knowledge is reached with a relatively low funding. Secondly, it was felt that negative nationalistic attitudes could be reduced if people are made aware of the importance of antiquities in other countries and certainly by excavating and recovering these.

Recommendations

Based on the discussion, the workshop made the following recommendations:

1. Following the model of the Field School in France (duration 1 month, involving participants from six EU countries), different field schools should be created. This intensive course should be strengthened in order to develop training in different field circumstances.
2. Students, who come from developing countries, and are enrolled in universities should also have access to field training.

In the ensuing discussion in plenum it was concluded that field training seemed to be a very important aspect in the conference. It was recognised as an absolute necessity that basic field training, which should include survey and archaeological landscape study, should be part of the curriculum for all the different fields of archaeology. This basic training could be divided into different modules; measuring, drawing etc. could be taught at the home institution (without having to go into the field), but knowledge of different field circumstances can only be acquired *"on the spot"*.

In the closing addresses, thanks were expressed to the organisers and especially to the rector of the Aristoteles University and to Prof. Dimitrios Pandermalis and his team for the impressive and dynamic organisation of the Conference and the lavish way all participants were received and entertained. It was the general feeling that the Conference had taken place under highly favourable conditions and that the whole discussion had been of great interest. Although the audience was smaller than expected, due to the short term organisation, the full archaeological symposium and field agenda, it was certainly a very attentive and interested one, which made the conference worthwhile for all participants; archaeologists as well as representants from DG XXII and SIGMA. The hope was expressed for a continuing good cooperation .

4.3. Recommendations of the SIGMA conference on archaeology

1. Field training (including survery and archaeological landscape study) is very important and should be included in the curricula of all fields of archaeology. Students should be encouraged to obtain training in different field situations. They should receive full credit for this.
2. Curricula should allow students to attend specialist courses abroad and receive full credit for it. They should also have the possibility to attend extensive expensive courses (laboratory, etc.) abroad.

   A European frame network on archaeology, coordinating all existing and future activities, will contribute to facilitating the access of any student to any specific domain in Europe, be it of a thematical, geographical or other nature.
3. Exchange programmes should include the possibility of attending intensive specialist (and field training) courses of a short duration (2 to 4 weeks).
4. Student exchange will be more profitable if concentrated to a greater extent on graduate and Ph.D. level.
5. More attention should be given to staff mobility.
6. There should be language training support for students. Language study (particularly of the less spoken ones) should be stimulated.
7. The use of electronic systems in teaching will serve important practical and political ends. A network in this sense should be implemented by setting up a Europe-wide pool of software teaching resources and associated documentation. This would include three elements:

   a) Core modules on methodology common to teaching in all countries;

   b) modules on regional archaeology, produced in the regions and illustrating diversity within Europe;

c) new European modules on thematic issues covering the whole of Europe such as heritage issues or archaeology and nationalism.

8. The development of a thematic network for specialist interdisciplinary training should be promoted.

9. A system of short intensive postgraduate interdisciplinary training courses should be developed.

10. At a European level an initiative should be taken to facilitate the movement of professional archaeologists throughout the Community. At present there is often a reluctance on the part of employers to accept qualifications from abroad, simply because there is a lack of knowledge of the standard achieved to obtain it. A guide outlining various standards involved and available to institutions in each of the Member States would solve this problem.

11. Archaeological heritage and the role of the past in the present should be dealt with in a more systematic fashion.

12. A (European) charter should be drawn up, describing the requirements of professional archaeologists with regard to rescue operations.

13. European initiatives within archaeology must not ignore non Member States. There are regions of Europe and the Mediterranean which must be considered in any future plans. Areas such as the former Eastern Europe, the Near East and the Maghreb cannot be excluded.

14. At a European level, archaeology should be recognised as an interdisciplinary subject with its own identity and research goals.

Annex

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Netherlands Organisation for Scientific Research

Conference Responsible:

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VIII

Language studies

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I. General introduction

Wolfgang Mackiewicz - Zentraleinrichtung Sprachlabor
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The Scientific Committee on Languages, which was part of the wider SIGMA Project, was made up of sixteen leading experts drawn from universities in fourteen Member States, Norway and Switzerland. In addition, there were representatives from C.I.U.T.I. (Conférence internationale permanente d'Instituts universitaires pour la Formation de Traducteurs et d'Interprètes), ESSE (European Society for the Study of English), from the SIGMA Executive Committee and the European Commission. The chairperson was nominated by UNICA, one of the six institutional networks forming the SIGMA consortium, which had undertaken the coordination of the Scientific Committee on Languages. The experts on the Committee (see page 26) came from considerably different backgrounds, ranging from literature to linguistics, applied linguistics, language teaching methodology and applied language studies. They represented different languages and came from different types of institutions and departments. In this way, the Committee was representative in the widest sense, representing not only the differences in the *status quo* and different national traditions but also the various sub-areas which make up the complex area of modern languages and philological sciences. In addition, all the members of the Committee had substantive expertise in international cooperation.

The Scientific Committee, which first met in late December 1994, undertook three major tasks:

(i) It produced **National Reports** for the sixteen countries represented, written by the sixteen national experts on the Committee. The Reports follow a common structure worked out and agreed by the Scientific Committee as a whole at two meetings in December 1994 and February 1995. They describe the *status quo* of language studies in the sixteen countries thereby, for the first time, providing a comprehensive and coordinated overview of the immensely complex area of language studies in higher education. In addition, they identify new needs, taking into consideration the development of language studies, professional requirements and the demands which will result from the creation of a united Europe. Finally, they propose concrete measures to be taken to satisfy the needs identified. The Reports were written in English or French and translated into either French or English within a period of four months — in some cases much less than four months — to be ready for the Erasmus Evaluation Conference on Language Studies held in mid-June 1995.

Because of the limited amount of time available, only 400 copies of the National Reports were produced to be made available to the participants of the Stockholm Conference to serve as a basis for discussion (An edited publication of the Reports is currently being prepared). However, syntheses of the three sections mentioned above were prepared for the Conference by Christian **Wentzlaff-Eggebert** (Universität zu Köln, D), Angela **Chambers** (University of Limerick, IRL) and Martin **Forstner** (C.I.U.T.I.) respectively.

The synthesis dealing with the *status quo* highlights the differences that exist between the linguistic situations in the various countries concerned as well as the different language policies with regard to minority language populations. It underlines the lack of convergence between the education systems with regard to students' educational background and age and the structure and content of higher education programmes (range of languages offered; length and intensity of language instruction — even in traditional language/ literature courses, let alone in language programmes for students of other disciplines). Because of these enormous differences the author believes that a coherent language policy should be vigorously pursued at a European level, aimed at enhancing mutual understanding while at the same time preserving the complex diversity of languages and literatures with which people can identify, and the cultural wealth which is part of this diversity.

The synthesis report on the *status quo* is to be published together with the National Reports. The 'needs' and 'new measures' synthesis reports form the basis of Sections A and B of Part Two of this Report. It needs to be pointed out however, that the syntheses of the National Reports presented as part of this Final Report hardly reflect the rich pictures and complex arguments presented by the rapporteurs themselves.

(ii) The Committee undertook an **evaluation of past inter-university cooperation in the area of languages**. This evaluation was carried out over a period of five months, by a junior researcher attached to the Committee, who was advised and guided in her work by the Committee Chairman as well as by members of staff of the former Erasmus Bureau. The report prepared by the junior researcher forms the basis of the Erasmus Report presented as Part One of the Final Report.

(iii) The Committee planned and staged jointly with Stockholm University and the European Commission (DG XXII) an **Erasmus Evaluation Conference**, which was held at Stockholm University on 9-10 June 1995.

The Conference was organised by the Swedish expert on the Committee, Staffan **Wahlén**, and a number of his colleagues who also prepared the National Reports for printing.

The Conference, which was attended by some 200 experts from sixteen European countries, completed four tasks:

(i) It reviewed the current state of language studies in higher education in Europe on the basis of the respective synthesis of the National Reports and of short presentations by the rapporteurs in working groups;

(ii) it evaluated the activities, under Erasmus, in the area of languages;

(iii) it provided information on and discussed new types of action foreseen under the Socrates Programme, particularly in the area of languages;

(iv) it formulated, against the background of the 'needs' identified and the 'new measures' proposed in the National Reports, recommendations, which have been incorporated into the Conference report (Part Two, Section C of the Final Report).

In two meetings held immediately before and after the Conference, the Committee reviewed the results of the work undertaken and the outcome of the Conference and drew up a plan for future action, taking into account opinions expressed at the Conference. A summary of these deliberations is provided at the end of this Report.

As chairman of the Scientific Committee I should like to take this opportunity to thank all those who made the work of the Scientific Committee possible: the European Commission, DG XXII; the SIGMA consortium and SIGMA office, notably Madame Cecilia Costa; UNICA, Madame Chantal **Zoller**; and Stockholm University. Personally, I should like to express my gratitude to the members of the Committee and to my own university, without whose unswerving support my task would have been an impossible one and this Report would never have been written. Needless to say, all errors and weaknesses in the Final Report are entirely my own responsibility.

II. Language studies in the Erasmus inter-university cooperation programmes (ICP)

A survey of the Erasmus coordinators' annual reports and of statistical analysis

1. Introduction

The following Erasmus report was first presented orally at the Erasmus Evaluation Conference in Stockholm. It is based on a more comprehensive report compiled by Christine Marlot, a junior researcher attached to the Scientific Committee. Christine Marlot was charged with evaluating the annual reports on activities in the area of *languages* submitted by the ICP coordinators. In addition, she was advised to evaluate the self-assessment forms which the programme coordinators and directors whose ICPs were entering the final year of the first triennial funding cycle had to complete and submit alongside their reports for 1992/93. In addition, she had access to a host of statistics lodged in the Erasmus Bureau.

In her analysis Marlot was faced with a number of difficulties:

(1) *Languages* is the largest subject area in European inter-university cooperation to date. In addition to the ICPs listed in the Erasmus subject area **09 Languages and Philological Sciences**, there are all the ICPs in Lingua Action II. The statistics for 1993/94 list a total of 457 ICPs for *Languages* — that is 19.2% of all ICPs, compared with 313 ICPs for the second largest area, *engineering*, and 28 ICPs for the smallest area, *communication/information*. Because of this, Marlot had to be selective. She decided to concentrate on the year 1993/94 and ignore the reports for the other years.

(2) In addition to her native French, Marlot knows English and Spanish. This allowed her to read reports submitted in one of the three languages mentioned, but limited the analysis of reports written in other languages to the multiple choice sections of the reports. The linguistic challenge posed by the self-assessment statements was less ardent, as most of them were written in either English or French, with German being the only other language allowed.

(3) It is not the case that the 457 ICPs mentioned above are all potentially relevant to Modern Language Studies, nor is it true that all the relevant ICPs were in Erasmus 09 and Lingua Action II. The Erasmus subject area **09 Languages and Philological Sciences** contains nine sub-areas, ranging from Modern EC Languages (41% of all ICPs requested for 1993/94) to Classical Philology (6%). While the latter can certainly be ignored outright, ICPs in areas like "Linguistics" (9%) and "General and Comparative Literature" (18%) may or may not be relevant, depending on the degree programmes covered by them. At the same time, it is also true that a large number of ICPs in other subject areas have a marked language orientation — notably in **14 Social Sciences** (cf. 14.6 International Relations, European Studies, Area Studies), in **04 Business Studies, Management Science** (cf. 04.1 Business Studies with Languages) and in **10 Law** (cf. 10.1 Comparative Law, Law with Languages).

In the event, Marlot did the following. She ignored the sub-areas 09.2 General and Comparative Literature, 09.5 Classical Philology and 09.9 Others (some 25% of the subject area 09). She evaluated a total of 60 Erasmus reports from 09, and 90 Lingua reports as well as 1,200 self-assessment forms from both subject areas. In addition, she also sampled a number of reports from 04.1 Business Studies with Languages.

In view of all these limiting factors, it would seem that the quantitative and qualitative evaluation presented in this report has to be taken as a "best estimate" of numbers and trends. It must be assumed that well above 20% of all ICPs and of all students taking part in student mobility have to do with modern languages in one way or another. Also, it is quite likely that there have been new developments relevant to language studies outside Erasmus 09 and Lingua Action II, which could be relevant to projects in the area of language studies.

It is probably also true to say that the subject area and sub-area codes used by the Erasmus Bureau for identifying ICPs suggest the existence of clear-cut distinctions between ICPs that in many cases did not and do not exist. This is probably particularly true for the complex area of *languages*. It is often the case that within a given ICP students from rather different course backgrounds are exchanged, just as it is often the case that a particular department sends the same type of student abroad through ICPs listed under different subject area or sub-area categories. While this is an indication of the flexibility of the Erasmus programme and of those actively involved in it, it probably also explains why a large number of ICPs never attempted to move beyond ensuring social and academic integration and why attempts to work together in developing teaching materials or modules sometimes did not get beyond the discussion stage.

The following analysis of statistics, of coordinators' reports and of self-assessments is mainly guided by the following three questions: To what extent were the aims and objectives of the Erasmus programme fulfilled in the area of language studies? To what extent did Erasmus succeed in implementing the Community's policies on languages in Europe? What developments, measures and activities in language studies were stimulated by Erasmus that can be regarded as responses to new needs and requirements?

2. Student mobility

2.1 Mobility seen in relation to specific countries

96.5% of the 457 language ICPs approved for 1993/94 had a student mobility component, 26.9% also had teaching staff mobility, while only 4.4% had curriculum development and 3.3% intensive programmes. These figures alone are a clear indication of where the main thrust of Erasmus has been: toward student mobility. Indeed, the quantitative achievement in this area is remarkable. From a modest beginning in 1987/88 of 631 students, the number of student flows rose to 12,132 in 1993/94. The average length of the study period abroad was 7 months — the same as the average for student mobility in general. These figures alone are ample proof of the fact that Erasmus has had a tremendous positive impact on language studies in Europe.

It is only when we look at the flows relating to and between individual countries that we notice some developments that may provide food for thought.

The United Kingdom, France and Germany head the list of institutions involved and of students moved, with Spain and Italy as runners up. (To be more precise, Italy ranks before Spain with regard to the number of institutions involved.) Denmark and Greece come bottom of the list. (The former EFTA countries are being ignored for the moment, because they were not eligible for Lingua Action II.)

Table 1:

Member State	1993/94	
	students received	students sent
UK	3,809	3,664
F	3,451	3,255
D	2,929	2,966
P	542	608
DK	425	483
GR	291	350

The following conclusions can be drawn from these figures:

- there is overwhelming interest in English, a point that is underlined by the fact that another 486 students went to Ireland;
- the "received" figures for France and French are further boosted by the interest in Belgium and Switzerland, just as for German for which we also have to look at Austria and Switzerland;
- both the United Kingdom and France received more students than they sent;
- the opposite was true for Portugal, Denmark and Greece, which sent more students than they received.

The above figures are further underlined by the fact that one third of all the students sent by the United Kingdom went to France (1230 out of 3,664) and over 35% of all the students sent by France went to the United Kingdom (1157 out of 3255).

It would appear that the drive towards promoting the less widely taught and used languages has not been a complete success. This is further underlined by the relatively small number of student flows between Denmark, Greece and Portugal.

Table 2:

Home/Host	D	F	UK	DK	GR	P
DK	117	74	91		11	9
GR	70	74	72	11		16
P	131	142	111	10	12	

As for the host country of the Conference, Sweden, the pattern is repeated.

Table 3:

	D	F	UK	DK	GR	P
S to	27	28	36	1	0	1
and to S	24	22	23	2	1	1

Some of the figures are partly explained by the fact that in countries like Denmark, Greece and Portugal, there are fewer institutions of higher education than in the United Kingdom, France, and Germany. There can be no doubt however that other factors had a decisive influence on the trends observed.

2.2 Disparity between approved and actual mobility

Another quantifiable area is that of the **take-up rate**. The European Commission has always been interested in having as many students as possible take part in mobility, and the question of a possible disparity between "anticipated" and "actual" levels of student mobility was the first of three questions asked in the self-assessment form.

The take-up rate in languages is 66%; it is above average, which can certainly be explained by the fact that in the case of language students there is complete agreement on the desirability of study abroad. Still, the fact that only two thirds of the approved flows were actually realised needs some explaining, especially since quite a number of coordinators reported a growing interest in Erasmus among students, to the extent that demand sometimes outstripped the number of places available.

The explanation most frequently offered has to do with money. The grants were not big enough and students offered an Erasmus grant often felt unable to accept it because they would not know how to support themselves while abroad. In the case of languages, there seems to be an additional factor.

In a number of countries students can choose between a language teaching assistantship and an Erasmus grant; very often they decide in favour of the assistantship simply because there is more money involved. It would appear that this trend has become even more marked since 1993/94 because of a further reduction in the *per capita* Erasmus grant and a harsher economic climate.

Another reason mentioned by coordinators and directors is "inadequate linguistic competence". In other words, even in languages it was quite often the case that there were not enough students whose command of the foreign language was such as to allow them to study abroad. This phenomenon is particularly noticeable in the case of the less widely taught languages, but by no means limited to these. The aspect of inadequate linguistic competence is underlined by the fact that in many cases both home and host institutions found it necessary to provide linguistic preparation even for students of the language concerned – and this in spite of the fact that under Lingua Action II funding of linguistic preparation was explicitly excluded.

Two further developments are worth mentioning in this context: in a number of cases increased interest in English has been accompanied by a declining interest in other languages, even in French; in the United Kingdom and Ireland the overwhelming interest in English of students from the Continent, has forced a number of English departments to operate a rather strict entry policy to the extent that a number of flows to the UK and Ireland were not realised because Erasmus students were not admitted to English courses.

2.3 At what stage did students take up their studies abroad?

The reports are not particularly informative on this point. There are however, indications that students normally went during the second half of their undergraduate course and that relatively few postgraduates participated in student mobility. Here it has to be borne in mind that mobility of postgraduate students was not particularly encouraged by the Erasmus programme.

2.4 Assessment and recognition

By **assessment** Erasmus meant the, "information provided by the host institution to the home institution on students' achievements." Answers were by multiple choice, with the possibility of multiple replies, whereby it has to be borne in mind that different practices may have been in place within one and the same ICP.

Christine Marlot analysed a total of 240 reports and found that:

- 191 transcripts of records or similar documents containing information on each course which the students have attended, including detailed grades/marks;
- 119 general statements of courses attended and overall assessment of the students' performance;
- 100 statements on the type of examinations/tests which the students have taken;
- 51 degree or diploma certificates;
- 39 transcripts of records or similar documents containing information on each course which the students attended, but without grades/marks;
- 6 certificates based on ECTS.

As for the transfer of grades or marks, most ICPs seem to have developed their own conversion tables. In this context, a number of coordinators commented on the fact that marks achieved at the host institution had been upgraded by the home institution so as not to put Erasmus students at a disadvantage in comparison with their peers who had stayed at home. Also in a number of cases, students who had failed exams at their host universities were allowed to re-sit them at their home universities.

Recognition refers to the formal written certification awarded to students by their home institutions for their studies abroad. Again, answers were by multiple choice. Christine Marlot sampled 210 reports and her findings were that:

- 167 attestations of study abroad in transcripts of records annexed to or separate from the degree certificate;
- 48 attestations of study abroad delivered with the degree certificate of the home institution;
- 12 joint certificates, issued by both the home and host institutions;
- 11 double degrees, issued by both the home and host institutions.

The questions in the report form evaded the question of the extent of recognition. That there were problems with recognition is admitted by quite a number of coordinators. How complex an issue recognition is was explained by Maiworm *et al.* in their study *Experiences of Erasmus Students 1990-91*, which was based on questionnaires completed by Erasmus students. Among other things, Maiworm *et al.* were interested in the extent to which the academic study abroad was recognised and in the extent to which the total duration of studies was likely to be prolonged due to the study period abroad.

As for the degree of recognition, Maiworm found that in languages 69% of the studies undertaken abroad were recognised, compared with an average of 74%. Among the 16 subject areas listed, languages ranks – together with geography – fourth from bottom. Regarding prolongation of studies, language occupies a medial position. Still, it must be regarded as unsatisfactory that on average, students who had spent a full academic year abroad apparently expected that their studies would be prolonged by one semester. It would certainly be wrong to read too much into these figures; also, things may have improved over the past four years. It seems to be the case however, that in languages – perhaps more than in most other subject areas – there is a danger that home institutions as well as the students themselves view study

abroad primarily as a vehicle for language improvement and increased cultural awareness (the comparatively low recognition rate contrasts with the students' own assessment of their academic progress during study abroad. Maiworm *et al.* found that 85% of all language students rated their academic progress abroad, compared with what they would have expected in a corresponding period at their home university, "much better", "better" or "same" – far more than in any other subject area).

The point being made is that it is important to note that in the overwhelming number of all cases students had the opportunity to follow courses within the regular programmes offered by their host universities; in only a few, did students follow courses put on specifically for foreign students.

3. Teaching staff mobility

As was explained earlier, some 27% of all ICPs in languages had a teaching staff mobility component. Christine Marlot found no information on how many members of staff took part in these programmes nor what the take-up rate was. The following points seem to stand out:

- In the ICPs sampled, some 80% of the courses taught by visiting staff were compulsory, another 10% were optional with participating students receiving credit for attendance and only 10% were tailor-made courses which constituted a complement to the regular courses at the home institution. From this it would follow that visiting teaching staff were successfully integrated into the host institutions' teaching programmes (answers by multiple choice);
- the great majority of the teaching provided by visiting staff was for third/fourth/fifth/sixth year students; courses for younger students and postgraduates were less frequent (answers by multiple choice);
- the reports confirm the well-known fact that fewer visits took place than had been anticipated in the applications and that the visits were on the whole shorter than originally planned. The reasons given by the coordinators would seem to apply to staff mobility in general and need not be discussed in this context (the average length of the teaching visits analysed by Marlot was 4.8 weeks). One factor which apparently was not mentioned by coordinators should be further investigated. Bilateral relations in language studies often involve four different departments – one sending and one receiving department at each end. This is known to have, on occasion, complicated student mobility; it would not be surprising if the same were to be true for teaching staff mobility;
- the coordinators are at great pains to emphasise the importance of the visits that did take place:
  - Visiting staff provided valuable inputs to teaching and research in the host institutions. The visits created opportunities for discussions with colleagues and in a number of cases led to the joint production of teaching materials and to the introduction of new language teaching methods at the host institutions. It would seem, however, that many of the opportunities inherent in staff mobility were only scratched;
  - in a number of cases visiting staff taught minority language courses not normally available at the host institutions, thereby opening up students flows which had previously remained barren;
  - visiting staff obtained a clearer understanding of the education systems of the countries visited. As a result, they gained a much clearer idea of the educational background of the Erasmus students sent to their institutions.

Although the organisational difficulties are only too apparent, it is equally clear that staff mobility in the area of languages has had positive effects both on student mobility and on curriculum and course development and that these opportunities need to be further exploited.

4. Curriculum and course development and intensive programmes – new developments, measures and activities triggered by ICPs in languages

At the beginning of this survey, it was pointed out that in 1993/94 only a very small percentage of ICPs in languages had curriculum development or intensive programme components – 4.4% and 3.3% respectively.

The following points would seem to be relevant in this context:

- Only a small amount of Erasmus money was earmarked for these activities and, in any case, Lingua Action II explicitly excluded curriculum development and intensive programmes;
- in order to stand a chance of approval, applicants had to provide a detailed outline of what they intended to do; in other words, they had to invest time and effort in drafting their application;
- particularly in arts subjects, joint curriculum development faces tremendous difficulties in the form of structural differences and barriers;
- plans for new, jointly developed curricula and courses, let alone the curricula and courses themselves, have to be accepted by colleagues, by institutions and sometimes even by external authorities.

In spite of all these impediments, a number of interesting curriculum and course development projects received funding. For example, Christine Marlot came across two projects concerned with the development of courses for the

training of conference interpreters and of translators respectively. Another project that sounded interesting was for a programme called "Langues et internationalisation des PME"; its aim was to equip students with the linguistic and extra-linguistic competencies needed in small and medium-sized businesses and the methods applied included linguistic and cultural immersion through mobility.

It needs to be emphasised however, that new developments at curriculum and course level were not limited to the projects directly funded by Erasmus. In fact, the majority of new developments seem to have been spin-offs from student and staff mobility programmes.

Here are a few examples:

- One way of promoting a minority language is shown by a huge ICP which was specifically set up to boost the learning of Dutch. Student and teaching staff mobility were supplemented by working groups on various aspects of Dutch as a foreign language;
- one ICP tried to combine the advantages of study abroad and assistantship by giving visiting students the opportunity to teach their mother tongue both inside and outside the partner institutions;
- many institutions seem to have recognised the new linguistic requirements and challenges created by increased student mobility under Erasmus. The practical language components in language degree programmes were strengthened; additional languages – particularly minority languages – were raised to the level of degree programmes;
- in a number of cases, the opportunities offered by Erasmus led to study abroad becoming a compulsory rather than an optional component of a course programme;
- contacts through Erasmus seem to have encouraged the setting up of new courses combining applied language studies and cultural studies;
- the arrival of students of applied languages in institutions where courses of this type had hitherto been unknown led, in some of the host institutions, to changes in existing programmes and the introduction of new programmes of a similar kind;
- in a number of cases, contact with more professionally minded partner institutions through Erasmus brought about a shake-up in the training of translators and interpreters;
- ICPs have also provided a framework for research projects relevant to the teaching and learning of foreign languages;
- Erasmus in general and ECTS in particular have had a profound impact on programmes in business studies and management science. New courses with an international slant were set up; existing courses were made more international. Language modules are offered as compulsory or optional components; courses are taught through foreign languages; study abroad is encouraged or forms a compulsory part of a given course. The languages most prominent in these courses are English, French, German and Spanish, but opportunities for learning Greek, Dutch, Danish, Catalan and Japanese are also provided.

These and similar developments and projects are a clear indication that inter-university cooperation is a rich potential source of innovation – be it at the level of the individual institution or at an international level. However, the fact that these developments often failed to have a wider impact points to the limitations of the Erasmus ICP as an instrument of innovation and change.

5. Summary

1) Student mobility under Erasmus/Lingua Action II has had an extremely positive effect on the quality of language studies in higher education.
2) Fresh attempts have to be made to promote the teaching and learning of the less widely taught and used languages in Europe.
3) In the future, greater attention will have to be paid to the involvement of postgraduates in inter-university cooperation activities. To this end, greater support will be needed for curriculum development and intensive programmes.
4) Without any doubt, the insistence of Erasmus on academic recognition and integration has fundamentally changed the way study abroad is perceived by both students and staff in modern languages. However, further improvements in the area of recognition and integration are called for.
5) In spite of various organisational difficulties, staff mobility in the area of languages has had positive effects both on student mobility and on curriculum and course development. These opportunities need to be further exploited.
6) Student mobility and teaching staff mobility in the area of languages and the cooperation of staff and departments connected with these activities have had important spin-offs at the level of curriculum and course development. This is proof of a widespread readiness in institutions of higher education to respond to new needs and requirements.
7) Positive developments at curriculum and course level have often been accidental and have usually been limited to individual institutions or ICPs. Also, new developments have been hampered by lack of acceptance among colleagues, institutions and external authorities. This is where Socrates can and should provide new orientation, by proposing concrete measures and by insisting on greater institutional responsibility in inter-university cooperation.

III. Final report

A. Prospects in language studies Identification of new needs in education and training

This part of the Final Report is an abbreviated version of the "Synthesis Report on New Needs" *prepared for and presented at the Stockholm Conference by* ***Angela Chambers*** *of the Department of Languages and Cultural Studies at the University of Limerick in Ireland.*

A.1. Introduction

The sixteen national reports on languages in higher education reveal a large degree of consensus on the part of the authors on needs in the area of language studies. From even a cursory reading of the reports, it is easy to describe the environment from which they have emerged, an environment which is clearly similar in all the countries concerned. On the positive side, there is an increased appreciation of the need for language skills, with several reports mentioning large increases in the numbers of students. Allied to this is an increase in demand for interdisciplinary programmes combining one or (less frequently) two languages with the study of a professionally oriented discipline, and a rise in the number of students choosing a language as an elective subject. Another positive factor, mentioned in all the reports, is the enormous potential of developments in new technologies for language learners and teachers.

On the negative side, all these developments have come at a time of economic recession in Europe. While references to cutbacks are not unusual in the reports, there is no mention of increased funding in any area. Another negative factor is the apparent absence of strategies and policies guiding the provision of language studies in higher education at a time of rapid and profound change in the language disciplines.

A.1.1. The impact of language teaching in schools on language studies in higher education

Before examining the situation of language studies in higher education, it is interesting to note the extent to which the content and the level of provision is determined by the situation of languages at secondary level. In this context four issues were raised in several reports:

1) T*he lack of diversity in languages offered by schools*. Lack of diversity, in particular the dominance of English and a small number of other major languages, is perceived as a problem in several reports, both in secondary and higher education. The lack of qualified teachers in the less widely taught languages serves to ensure that this situation is perpetuated;
2) *The level achieved in oral and written skills*. Implicit in all the reports and explicit in many, is the assumption that language study in higher education should commence, ideally, at intermediate or advanced level and certainly not at beginners' level. Yet in many countries provision at secondary level is such that significant numbers of students will not be available to study certain languages at third level unless they are offered at beginners' level. Even where languages are studied at secondary level, there is widespread concern that the level achieved is not sufficient for study in a language degree programme at third level, particularly in the context of accuracy in written skills;
3) *The number of languages which may be studied.* If national education systems do not facilitate the study of two languages at secondary level, then the universities will find it difficult to provide degree programmes in two languages, unless provision is made for a*b initio* language study;
4) *Liaison between secondary school and university.* While several reports emphasise the problems arising from varying entry levels, only one report, from the Netherlands, explicitly defines the need for greater liaison between secondary school and university.

A.2. Language degrees offered by universities

A.2.1. Traditional language and literature programmes

It emerges from the reports that there is not a common structure in language and literature degree programmes, nor is there consensus on the nature of the degree and its place in the Europe of the 21st century. However, in all the reports there is a clear statement of the type of study which is required if language graduates are to be provided with skills which will be of use in a future career. Five areas of need are mentioned:

1) *Cross-cultural communication*. It is emphasised that there is a need for the language degree to provide cross cultural communicative skills. The need for new expertise in this area, both in teaching and research, is also stressed;
2) *Advanced language skills*. The creation of an

environment in which students are able to acquire advanced language skills is seen as a priority in the vast majority of reports. Far from seeing the present environment as conducive to this goal, there is an acute awareness of the constraints which make it difficult, if not impossible to achieve. These include:

- increasing numbers of students, with no accompanying increase in numbers of staff;
- lack of research expertise in second language acquisition;
- lack of time, resources and expertise for the development of research and course materials using new technologies;

3) *Diversity of languages offered.* Many of the reports refer to the dominance of one or two languages, to such an extent that in a very large number of universities only a selection of the official languages of the European Union is offered. It is not only lesser used languages which are affected by this trend. The dominance of English is particularly marked in the Scandinavian countries, while in the Netherlands even German has suffered. The reports agree on the need to guarantee that a diverse range of European languages are offered for study throughout Europe;

4) *Comparability of levels*. The lack of levels of achievement which can be tested and which are recognised both nationally and internationally is mentioned in a number of reports. The need for the introduction of systems to ensure comparability of achievement is particularly emphasised in three reports. In the British Report a nationally defined system of levels of achievement against which all qualifications can be measured is deemed necessary. The Italian report stresses the need for common curricula and certifications throughout the European Union. In the Swedish report the need to develop better testing procedures and methods, both as regards language proficiency and other components of language studies, is emphasised;

5) *Study abroad.* There is widespread support for a further increase in student mobility, with a number of reports recommending that a period of study abroad should be compulsory as part of a language degree.

A.2.2. Alternative programmes

There is considerable variation in the provision of alternative language degrees, ranging from no provision in some States to a wide variety of degree programmes in others. In most reports it is emphasised that still greater inter-disciplinarity is needed.

Areas of need.

The five areas of need identified in the previous section also apply to these alternative programmes (see section A.2.1). In addition to these, the following needs have been noted:

1) *New needs of members of staff.* There is an awareness that these new degree programmes are creating new needs for expertise in teaching and research by university staff to underpin the new directions in which language studies are developing. Areas of expertise considered relevant include cultural studies, European studies, second language acquisition and new technologies;

2) *Staff allocation mechanisms*. In some reports it is stressed that the emphasis on language skills is changing the nature of the work of language departments to such an extent that allocation mechanisms which they share with their colleagues in the human sciences no longer correspond to their role in universities. There is a need for these mechanisms to be reviewed.

A.2.3. Postgraduate programmes

Two types of need predominate at postgraduate level:

1) *New areas of research*. Needs in this area are closely related to those identified at undergraduate level. (see section A.2.2.1. Indeed it is the major changes in undergraduate studies in modern languages which are creating the need for research developments in cultural studies and applied linguistics, particularly second language acquisition and languages for special purposes.

2) *European cooperation and new structures*. There is a stark contrast between the developing situation in European exchanges at undergraduate level and the lack of such activity in the area of postgraduate programmes and research. Several reports identify a need for major developments at a European level in this domain. The authors of some reports are even more ambitious, identifying a need for postgraduate programmes to be developed at a European level, with a period of study abroad integrated into certain programmes.

A.3. Initial and in-service training of language teachers

A.3.1. Initial training

Despite the different structures in the 16 States, there is a high degree of consensus among the authors concerning needs in this area. Seven issues are raised in the majority of reports:

1) Greater emphasis needs to be given to language teaching methodology rather than to general educational studies;

2) more attention should be devoted to ensuring the quality of teachers' language skills;

3) diversity in the provision of European languages is not safeguarded in many States and there is need to rectify this situation (see section A.2.1.3.);

4) initial training programmes are not meeting the changing needs of teachers, and more attention should be devoted to areas such as autonomous learning, learning how to learn and language awareness;

5) classroom research should be encouraged to raise teachers' awareness of the nature of the language learning process;

6) there is a need for training programmes to ensure a higher level of expertise in the use of new technologies;

7) in several reports the authors conclude that EU programmes have no significant impact in the area of initial training for language teachers. The need for the introduction of study or teaching practice abroad is noted in a number of reports.

In conclusion, many of the reports seem to indicate that the initial training of language teachers lacks a clear focus and that greater coordination between linguists and educationalists is necessary, both at a national and a European level.

A.3.2. In-service training

Once again the reports reveal a high level of consensus in the needs identified.

1) Many reports recommend an increase in provision, so that all teachers will have access to in-service training at least once a year, with appropriate replacement teachers and funding;

2) the need for in-service training in three areas is highlighted:

   – language skills development;

   – language teaching methodology;

   – developments in the disciplines in which the teachers have specialised;

3) in a number of States, existing training programmes are provided by a fairly large number of organisations and in-service provision is perceived as lacking in focus and coordination. This is a need which could be met by action at a regional, national and European level;

4) higher degrees can provide in-depth study of subjects which are relevant to the activity of language teaching, in the discipline studied, applied linguistics or a combination of both. The need for the introduction or expansion of such courses is stressed, possibly at a European level;

5) increased European cooperation in the field of in-service training is a relatively recent development in many States. Initiatives such as Lingua funding to enable teachers to attend courses abroad are welcomed, although there is a need for further expansion in such initiatives. Developments in distance education and the new technologies are seen as having great potential to contribute to the development of in-service training at an international level.

In conclusion, the need for greater focus, cooperation and coordination between all those involved in language teacher training in Europe, which was identified as a need in initial training, is also present in the area of in-service provision.

A.4. Language provision for students of other disciplines

According to many reports, this is the domain of language studies in higher education where changes have been most dramatic in recent years, without any accompanying definition or implementation of a strategy in most States or at a European level. Among the many needs identified, the following seven appear most frequently:

1) *Greater prestige*. The reports highlight the contrast between the low status of this area of study and its importance for the development of mobility and cooperation among professionals in a multi-lingual European context; they call for greater prestige to be given to studies in this area;

2) *Needs analysis*. The nature of language studies for students of other disciplines must be defined. The importance of cross cultural communicative competence and specialist terminology, of active and passive skills, is assessed intuitively at present, with little or no theoretical and empirical research informing the choices of individual course planners;

3) *Subject-language integration*. The level of integration of the specialist discipline and the language component varies considerably, within States and even within individual universities within the same State. A number of reports identify a need for courses to be delivered through languages such as English, French and German. There is a potential contradiction between this need for greater use of the major languages and the need for diversity which has already been noted;

4) *Extension of provision*. While language study is available to students of all disciplines in a number of States, certain disciplines are more popular in other States, particularly business studies, with a focus on export marketing and tourism. In areas such as law and economics, integrated degree programmes exist in some States and there is a need for them to be introduced in others. Students of engineering and science are much less likely to receive language courses and the availability of language study to an advanced level in this area is relatively rare;

5) *New needs in research*. The need for research in LSP (languages for special purposes), Applied Linguistics and CALL (Computer-assisted language learning) to underpin this new activity is stressed in several reports;

6) *Language centres*. Language centres have been introduced in many universities to cater for this new type of teaching. Reactions to this development are mixed. The status of such centres, particularly their contribution to research in applied linguistics, is a crucial factor in the evaluation of their contribution to developments in this area;

7) *Internationalisation*. An increase in the number of student exchanges in this area is seen as a priority.

In conclusion, the provision of language courses to students of other disciplines is clearly an area where language centres and language departments, universities, bodies responsible for funding universities and those responsible for the allocation of European funding have failed to design and implement a strategy for the development of what all agree is an important activity. Staffing, research, course design and the place of the language course in the programmes of study, are all in a state which can euphemistically be described, as in the German report, as "unclear".

A.5. The training of translators and interpreters

Needs in this area have much in common with those identified in other programmes and courses, namely:

1) Diversity of languages offered (see section A.2.1.);
2) an increase in the provision of courses;
3) the need for a high level of language skills for those entering these programmes;
4) the need for greater international cooperation and an increase in the number of student exchanges;
5) the need for internationally recognised levels of achievement which can be defined and tested;
6) the need for an increase in research in this area.

Areas of need identified which are specific to this area include:

1) Professionalisation of the activity of translation throughout Europe;
2) in-service provision should be increased, including higher degrees and courses delivered through distance education to overcome the problems of peripherality;
3) the training of translators should be clearly distinguished from the training of interpreters;
4) more training in conference interpreting is necessary;
5) training programmes for translators and interpreters should include courses in areas such as law, administration, science, technology and literature to prepare students for specialist translation in these areas.

A.6. Language studies in non-university institutions of higher education

While provision in this area differs greatly from one country to another, the needs identified are similar and they have much in common with the needs which have already been noted in other areas. They include:

1) *An extension of existing provision.* The success of programmes in areas such as business and tourism is noted, while programmes in the areas of engineering, science and technology require the introduction or extension of language courses;
2) *Standardisation of levels of achievement.* It is stated in several reports that provision in this area requires regulation, ideally through the introduction of a system for testing the level of achievement which is recognised nationally and internationally;
3) *Greater international cooperation* and student exchange;
4) *Integration of developments in new technologies and self-access systems* into language courses in this sector.

A.7. Conclusion

The needs described in this synthesis report will already have been identified by the vast majority of linguists working in universities and colleges throughout Europe. However, the systematic identification of these needs in 16 European countries will have served a useful purpose if it reveals to those outside the language professions, particularly those responsible for the development of educational strategies and funding at a national and European level, the constraints within which language departments are currently operating. The combination of huge increases in activity in a rapidly changing environment and the lack of a strategy for the development of teaching and research in language studies in new directions limits the enormous potential of this discipline as a force for European integration.

B. Proposals for new orientation and new activities

Part III.B. of the Final Report is a synthesis of the final sections of the National Reports, headed "Measures to be taken to satisfy the needs identified". *It draws on a synthesis report prepared for the Stockholm Conference by* ***Martin Forstner****, Vice-President of C.I.U.T.I.*

B.1. Introduction

The national experts on the Scientific Committee were advised to consider the new measures under three headings:

- measures to be taken in the areas of initial and in-service language teacher training;
- measures to be taken in universities (outside the area of teacher training);
- measures to be taken in non-university institutions of higher education (outside the area of teacher training).

Under each heading they were to consider the measures with regard to three different levels of responsibility: institutions; regional and national authorities; and the European Union. This structure was chosen so as to enable readers to more easily compare the measures proposed by the various rapporteurs. In the event, things did not quite work out that way. The degree of autonomy enjoyed by institutions of higher education differs from one Member State to another. This means that measures that in one State are within the responsibility of the institutions may, in the case of another, be within the responsibility of the regional or national authorities. Generally, there is less overlap between the institutions and the regional and national authorities on the one hand and the European Union on the other.

Such information is, of course, of value once attempts are made to put the measures proposed into practice. In the context of this report however, it is more important to identify and spell out the measures proposed by the rapporteurs than to state in each case whose responsibility is at stake.

B.2. Language teacher training

B.2.1. Initial training

- *Measures to bring education and training into line with professional needs*

Most rapporteurs share the opinion that the programmes currently offered fall far short of the professional requirements and that a fundamental re-orientation is needed to meet the challenge of a multi-lingual and multi-cultural Europe.

In this context a number of experts propose projects such as:

1) A survey of language teachers at primary and secondary level to determine their evaluation of their initial training, their perception of their needs in in-service training and their perception of their needs in the area of higher degrees (Denmark and Ireland; cf. also Belgium);
2) a review of existing provision in education and training with specific reference to the needs of language teachers, including initial training, in-service provision and higher degrees (Denmark and Ireland).

Projects like these could be conducted at either a regional, national or European level.

As was explained in Part II.A. of this Report, the experts themselves have fairly clear ideas of what the needs of language teachers are and where the main thrust in the respective programmes should be and they urge institutions and authorities to thoroughly revise existing programmes, giving priority to linguistic and transcultural competence, applied linguistics and language teaching methodology.

What some experts seem to have in mind is a core curriculum for language teacher education and training in the European Union guaranteeing a common core of knowledge and skills required of all language teachers.

- *Measures to guarantee acceptable levels of linguistic competence*

1) Introduction of compulsory language entrance tests at the beginning of programmes;
2) introduction of intensive pre-study language modules for languages not currently taught at school. Provision of remedial language courses in cases where schools fail to provide a sufficiently high level of proficiency;
3) introduction of an obligatory study-related stay abroad (3-10 months) as part of the programmes (study abroad or language assistantship). Related to this is the proposal that mobility programmes should give priority to students following courses leading to a language teaching qualification. In this context a number of rapporteurs point out that more funds will be needed to support study abroad;
4) agreement among those responsible on a minimum acceptable level of linguistic competence to be required of all future language teachers at the end of their training and introduction of language examinations designed to test this competence.

- *Measures to promote the diversity of language provision at school level*

1) Changes in regional or national regulations concerning language teaching at school level to allow the teaching of all the EU languages, including the less widely used and less widely taught languages;

2) introduction of degree programmes in all EU languages hitherto not represented in the school curriculum so as to allow students to obtain teaching qualifications in these languages. Additional funds will have to be made available for this. It is however felt to be unrealistic to expect all universities to offer the full range of language programmes and a division of labour is called for in this respect. A number of rapporteurs also consider the possibility of enabling students to study a minority language in the target language country if appropriate courses are not available in their home country;

3) course and exam regulations should be made more flexible. Students studying towards a language teaching qualification should be allowed to and indeed encouraged to study two languages to degree level. They should be further encouraged to combine a majority and a minority language;

4) students studying towards a language teaching qualification should be encouraged to learn another foreign language in addition to their major language(s). Regional and national authorities should allow qualified language teachers to teach languages for which they do not hold a teaching qualification provided they have the minimum linguistic competence required. Such additional qualifications should be regarded as bonus points in the recruitment of language teachers;

5) linguistic diversity at school level implies that for a number of languages the teaching and learning objectives will normally be limited to receptive skills. Future language teachers should therefore be familiarised with methods of teaching receptive skills;

6) the new technologies are felt by some rapporteurs to provide particular opportunities for the teaching and learning of the minority languages – just as they seem to have great potential for intercultural communication and self-study in general – and institutions are urged to make appropriate provision in this area.

The importance attached to language teaching methodology and applied linguistics in language teacher education and training, leads a number of experts to call for renewed and concerted research efforts in these areas. The departments concerned should increase recruitment to postgraduate study in applied linguistics and language teaching methodology and language teachers should have the opportunity to study on these postgraduate programmes.

B.2.2. In-service teacher training

Here the experts hardly go beyond what was listed in section III.A.3:

1) Language teachers should have guaranteed access to in-service training once a year;

2) those responsible for in-service training should cooperate at a European level, opening up opportunities for teachers to attend courses abroad. Mobility programmes should be extended to in-service training;

3) just as language teachers should have the opportunity to follow postgraduate programmes, language teacher mobility should be given renewed attention. Teachers should be encouraged to spend a period of time in a minority language country, where they would have the opportunity to learn the national language to a level of proficiency required of language teachers.

B.2.3. Measures within the responsibility of the European Union

All the experts look to the European Union for support in the continuation and expansion of student and staff mobility, including the mobility of language teachers in school education. They also see a special role for the European Union in the introduction of the new media to the areas of language teaching and learning and in-service training.

More significantly however, a number of experts propose measures designed to help bring about the improvement and innovation in language teacher education and training deemed necessary in view of the new professional and social linguistic needs:

1) The EU should support inter-university cooperation in language teacher education and training, particularly in joint curriculum development;

2) the European Commission should help set up a project or projects intended to thrash out recommendations for the content and even structure of language teacher education and training and for minimum acceptable levels of attainment.

The experts seem to believe that entrenched attitudes in institutions and regional or national authorities can best be overcome by initiatives which are the result of European cooperative efforts and which are seen to have the support of the European Union. Linked to this is the expectation that initiatives like the ones mentioned above would further the recognition of study abroad and of language teaching qualifications throughout the European Union and thereby promote the mobility of both language teacher trainees and language teachers.

B.3. Measures to be taken in universities (outside the area of teacher training)

B.3.1. Traditional language degree programmes (incl. postgraduate studies)

• *Undergraduate programmes*

While the experts tacitly or explicitly express the opinion that in modern language programmes the link between study and professional life will continue to be a less direct one than in other subject areas, they recognise that students following these courses have to be equipped with skills and knowledge that will be of use to them in professional life. A number of experts suggest that, at national level, working groups should be convened, bringing together representatives of the institutions, the regional and/or national authorities and professional organisations to consider the question of new professional opportunities for modern language graduates.

Among the concrete measures proposed by the experts themselves are the following:

1) The teaching, learning and testing of linguistic competence should be a key element in modern language programmes. To this end, the following measures are proposed:
   - special entrance exams;
   - intensive pre-study courses in languages not normally available at school;
   - an obligatory study period abroad;
   - increased availability of modern technology and the development of its use in language programmes;
   - the development of language proficiency test methods, initially at a national level and ultimately at a European level;
2) introduction of "intercultural communication" into language programmes;
3) in countries where language programmes are normally offered as single courses, introduction of courses combining the study of two languages, one of them preferably a less widely used language;
4) extension of the range of languages offered as degree courses to include the less widely taught and less widely used European languages;
5) development of receptive language skills modules for the less widely used and less widely taught languages. Language students should be encouraged to do these in addition to their language majors. Such modules should have a marked intercultural profile.

• *Postgraduate programmes*

A number of experts advocate increased recruitment to Ph. D. programmes in the area of languages. Among the recommendations are the following:

1) Introduction of taught postgraduate programmes;
2) greater internationalisation of postgraduate studies;
3) increased postgraduate student mobility leading to the setting up of European graduate schools. The experts feel that the European authorities should play a major role in such initiatives.

B.3.2. "Alternative" programmes

A number of experts – notably those from Spain, Finland, Ireland, Portugal and Sweden – advocate the introduction of alternative interdisciplinary degree programmes outside the context of the Arts degree, similar to the European studies and area studies programmes set up in the United Kingdom and applied language studies programmes offered for example, in France and the United Kingdom. Again, the study of two languages is deemed desirable.

Three proposals worth reporting are made in this context:

1) Alternative programmes should also be offered at postgraduate level (Finland);
2) the non-language components of such courses should at least partly be taught in the foreign language. For this foreign experts should be brought in, be it through staff mobility programmes or through appropriate work contracts (France);
3) where the setting up and running of alternative programmes exceeds the expertise available in individual institutions, institutions in different Member States should consider the possibility of jointly designing and offering such programmes.

B.3.3. The training of translators and interpreters

A large number of experts call for the introduction of specialised programmes for the training of translators and interpreters. Three points stand out in this context:

1) The training of translators and interpreters should be professionalised;
2) the training of translators and interpreters should include the whole range of European languages (and by implication, of non-European languages);
3) translation studies should also be offered at postgraduate level.

The experts seem reluctant to formulate specific curricular recommendations. It is certainly not by chance that the expert from Ireland calls for the setting up of a body to advise on the professionalisation of the profession of translator – and one would like to add, of interpreter – in her country and the development of a framework for the professionalisation of translation (and interpreting) at a European level.

B.3.4. Research

All the experts seem to be worried that language studies might degenerate into mere language teaching and they all emphasise the need for teaching to be properly underpinned by research. What sets their pleas for a proper regard for research apart from the general claim about the overriding importance of research prevalent in academia, is the fact that the experts are also concerned about the quality of research. For them, research is linked to the central role of language in the creation of Europe; they see research in language studies primarily as applied research. Some of the experts would like to see a coherent national, and maybe even European, research policy. It is in this context that the Irish expert calls for a study of the need for research in the area of modern languages.

Among the concrete proposals for research projects made by the experts, are studies and surveys of the state of affairs in a number of areas of language studies and of the professional and social needs relevant to language studies. Also, the learning and teaching of languages are felt to be valid fields of research. In general, the experts call for a Europeanisation of postgraduate studies and research.

B.3.5. Language provision for students of other disciplines

In the section on "new needs", it was pointed out that all the experts see a need for quantitative and qualitative improvement in this field – a need which most institutions will be unable to satisfy unless substantially increased funding is made available for this purpose. However, a number of experts also stress the importance of establishing what current provision there is and what the linguistic needs of non-language students are. It is clear that students will need languages in at least three areas: study at home; study abroad; and professional life – ignoring, for a moment, the more general needs emanating from their being citizens of a multi-lingual Europe. What is not so clear is to what extent these students need specialised language provision oriented towards their field of study and/or their future professions.

Among the measures proposed for a radical improvement in provision are the following:

1) All non-language students should be given the opportunity to acquire a good working knowledge in two, or possibly more than two, foreign languages. To this end, language options should be introduced into all non-language degree programmes. A number of experts go even further demanding the integration of language study into all non-language degree programmes;
2) non-language students should be given credits for successfully completed language work;
3) language provision for students of other disciplines should focus on two areas: high-level competence in the "school" languages; and the less widely used languages. As for the latter, survival courses as well as courses limited to one or two skills should be introduced;
4) staff charged with the teaching of service courses should have the opportunity to attend in-service training courses;
5) Erasmus students should be invited to work as language tutors;
6) working groups should be set up to fix and describe graded levels of linguistic achievement and to develop, for all the Union languages, proficiency tests related to the levels identified. This kind of work, which has already started in a number of Member States, should be conducted at a European level;
7) priority should be given to the development of self-access facilities, including the use of modern technology;
8) part of the teaching in non-language programmes should be done in a foreign language, preferably by foreign experts;
9) a number of experts believe that one way of improving provision lies in the setting up of language centres in universities. The French expert sees the language centre as a unit having wide-ranging responsibilities – not only in the area of service courses, but also in research and in providing a service to traditional specialist courses.

B.3.6. Measures within the responsibility of the European Union

In the previous sections, repeated mention was made of areas where the European Union should lend support and provide orientation. This is a list of the measures and areas mentioned most frequently:

1) Continued support for student mobility and increased support for staff mobility and joint curriculum development;
2) increased support for European cooperation in the area of research, including postgraduate mobility;
3) support for a survey of the language needs of exchange students coming to a foreign country where they do not speak the language;
4) support for the joint development of language courses;
5) support for the joint introduction of distance education and new technologies into regular teaching practices.

B.4. Measures to be taken in non-university institutions of higher Education (outside the area of teacher training)

A majority of experts believe that the quantity and quality of language provision in these institutions is unsatisfactory. Almost all of them consider language study only in relation to non-language subjects and non-linguist professions.

The experts from Germany and Greece however, also see a role for non-university institutions in preparing students for linguist professions other than teaching. The German report speaks of, "training centres for interpreters" – and presumably, translators as well – which should pay more attention to the less widely used languages than has hitherto been the case and which should concentrate on the training of experts who can translate or interpret from one or two foreign languages into their mother tongue. One expert (Spain) calls for the introduction of mixed degree programmes combining languages and non-language subjects.

Among the measures advocated by the experts are the following:

1) Workshops should be set up and projects conducted to identify the language needs in major professional areas. The European Union should promote the cooperation of senior academic specialists, employers and executive staff of multinational companies;
2) the language programmes offered by these institutions should be directly oriented towards specific professional areas and, wherever possible, integrated into the courses proper;
3) language programmes should be extended to areas for which they have not normally been provided in the past;
4) the European Union should support the development of new teaching materials geared to the professional needs identified. These materials should be based on proper research;
5) because of the variety of subject areas and professional fields involved, special attention should be given to the integration of self-access and multimedia facilities into the language programmes. The expert from Austria proposes the development of "learning packages" for different levels to be designed and produced by inter-disciplinary working groups;
6) language programmes should be restructured. In addition to the two hours per week, which seems to be the norm in many cases, intensive courses should be introduced. The language provision should be modularised;
7) the degree or diploma exam should have a language exam as a separate and distinct part;
8) levels of achievement, assessment criteria and certification should be standardised – not only at a national, but eventually also at a European level;
9) European support for cooperation between these institutions should be stepped up.

B.5. Conclusion

As will have become clear, the measures proposed by the national experts vary in character. They do not constitute ready-made action plans. Some of the measures proposed are very concrete and, given enough resources and some good will, could be realised at short notice. Others are more controversial and in danger of becoming topics for endless debate. Others are still rather vague and require further reflection. All the authors agree that in view of the urgent linguistic needs posed by European integration, decisive action is required and that such action should, wherever possible, be taken at a European level, with the support of the European authorities. Comprehensive European projects of the kind proposed by some of the experts might well be the most promising first step towards much needed improvement and innovation.

C. Language studies in Europe Cooperation in higher education

Conclusions, recommendations and outlook (Stockholm Conference, 9-10 June 1995)

A large part of the Conference was taken up by discussions – both in plenary sessions and in group sessions – of new needs in education and training and new measures required in the light of the needs identified. The most fruitful part of the debate took place in six workshops which addressed the following specific topics:

- *Extending the Use of the European Credit Transfer System (ECTS) in Languages;*
- *Language Teacher Training;*
- *Languages in Employment - Integration of Language Studies into Other Subject Areas;*
- *Active or Passive Multi-lingualism?;*
- *Intercultural Competence;*
- *Postgraduate Programmes;*

The following Conference report is based on the group reports submitted by the rapporteurs and chairpersons of the workshops. It also draws on written statements submitted by a number of participants after the end of the Conference.

C.1. Extending the use of the European Credit Transfer System (ECTS) in the area of languages

Chair: Bertil Holmberg; Rapporteur: Hugh Ridley

Student mobility under Erasmus/Lingua Action II has had an extremely positive effect on the quality of language studies in higher education. The current level of mobility needs to be maintained and, if possible, raised even further. However, to improve the quality of student mobility in this area, renewed efforts have to be made in the direction of full recognition and integration of study abroad. Without any doubt, a large-scale introduction of ECTS in languages would be the best way of ensuring full recognition and integration.

While the participants of the workshop on ECTS came out clearly in favour of the implementation of ECTS in language studies, they expressed the opinion that the introduction of ECTS might, at least initially, require a certain degree of flexibility. In this context, a number of areas of potential difficulty were identified. They included:

1) The difficulty of establishing transparency of information relating to prerequisites and levels;
2) particular difficulties inherent in what was seen as the "non-canonical" nature of language studies (course structures, defining work-load norms, length of learning-units, asymmetrical nature of linguistic experience of translation/interpretation students in visit to target country and grading problems).

In view of these potential difficulties, the participants of the ECTS workshop felt that further discussions and trial runs might be needed before the system was generally introduced. These could take the form of national projects – like the successful implementation of ECTS in law faculties in Dutch universities – or be conducted as transnational pilot-studies with the aim of identifying models of good practice in the application of ECTS to language studies. Here, the experience of institutions currently extending ECTS to languages should be particularly useful.

C.2. Language teacher training (incl. in-service training)

Chair: Graÿa Abranches, Rapporteur: Vasso Tocatlidou

C.2.1. General recommendations

1) While fully recognising and respecting the divergence between and characteristics of the national structures and delivery systems of language teacher training, the European Commission should set up and support a major project aimed at the implementation in all the Member States of certain principles regarding the training and professional qualifications of language teachers.
2) Initial and in-service language teacher training should form a *continuum*. The Commission should support training institutions' initiatives intended to put this principle into practice.
3) The learning of foreign languages is a prerequisite for mobility, cooperation and mutual understanding within Europe. In consequence, it is not enough that language teacher training should be concerned only with language teaching at school. The wide-ranging effects of foreign language teaching and learning extend also to adult education, commerce and industry. Initial and in-service training programmes should equip future and practising language teachers with new professional skills, enabling them to help language learners to acquire competencies needed in working life.
4) Bilingual education has been shown to lead to a higher level of language competence than is normally achieved in school teaching. Future language teachers should be equipped with the linguistic competence and the factual

and procedural knowledge needed in bilingual education; they should also be acquainted with the principles of bilingual education.

5) The new technologies offer great potential for cooperation between teacher trainers and for the exchange of linguistic resources as well as of teaching and learning materials. In view of this, it is of the utmost importance that the Commission should encourage and support initiatives seeking to research and develop the use of new technologies in language teacher training.

6) The European Commission should see to it that minimum acceptable levels of professional knowledge and skills to be required of language teachers throughout the European Union are achieved and guaranteed in all the Member States. To this end it should support projects which pursue the objectives outlined in section C.2.2.

C.2.2 Specific recommendations

• *Mobility*

1) Enable all future language teachers to spend a period of between six and twelve months in the respective target-language countries.

2) Seek to introduce a concept whereby all future language teachers are required to spend a period of time in a country whose language is different from the language(s) they are studying in order to sensitise them to what is involved in learning a new language (For example, a German student of English would do a Spanish course in Spain).

3) Support the exchange of foreign language teachers between target-language countries, enabling them to refresh their linguistic competence and to become acquainted with different teaching methods.

4) Promote "European workshops" aimed at developing the "European dimension" through joint courses dealing with innovation in language teaching.

5) Urge the Member States to support mobility at all levels through supplementary grants.

• *Joint programmes*

1) Encourage the development of programmes offered jointly by institutions responsible for initial teacher training and schools as well as by language departments and departments of other disciplines.

2) Promote theoretical and practical training courses offered jointly by training institutions and institutions from professional life, aimed at developing specific professional competencies (for example, a course jointly run by an initial training institution and a chamber of commerce or by an in-service training institution and a local government) in order to improve language teaching for specific professional target groups.

3) Promote courses offered jointly by departments of different foreign languages for the training of teachers of more than one foreign language.

4) Support research projects on issues central to language teacher training (methods and instruments for assessing student performance, analysis of professional needs, development of innovative materials, etc.).

5) Promote the joint development of training modules by institutions in more than one Member State by the use of information technology.

6) Support joint projects for the development of materials and instruments for innovative and distance training.

• *Intensive programmes*

1) Promote, through multi-national research programmes devoted to specific topics, intensive training courses staged in target-language countries for both types of language students, i.e. future language teachers and students of other disciplines.

2) Promote the training of foreign language teacher trainers through intensive courses for more than one language jointly developed by a number of university departments.

3) Promote the setting up of joint programmes or summer schools for future or practising language teachers coming from different countries.

C.3. Languages in employment – integration of language studies into other subject areas

Chair: Staffan Wahlén; Rapporteur: Thomas Fraser

This workshop dealt with two distinct areas: the training of interpreters and translators; and language programmes for students of other disciplines. In addition, the question of programmes in major non-European languages was brought up in plenary session.

1) Training of interpreters and translators:

   • interpreters and translators have a crucial role in the creation of Europe. In order to avoid unfair discrimination, all citizens of the European Union must be able to avail themselves of the services of professional interpreters or translators if the need arises, be it in a personal or professional context;

   • there was complete agreement on the following points:
   – translation and interpretation are professions in their own right requiring professional training programmes. Neither traditional nor alternative language programmes constitute professional training programmes of this kind;

– training programmes need to be geared to the professional needs of interpreters and translators — to a larger extent than has widely been the case in the past;
– translating and interpreting are separate skills, requiring separate training programmes;
– there is a special need for more qualified interpreters and translators in less widely used European languages;

• while there was agreement on the above principles, opinions differed with regard to the specific professional needs of interpreters and translators and the appropriate structure and content of training programmes. As regards the training of interpreters, a convincing case was made for this to be done at postgraduate level and carried out by professional interpreters. Courses of this kind could be relatively short provided the students had a high level of linguistic competence in a number of languages and met certain other prerequisites, such as familiarity with specific subject areas. What emerged from the discussion was the need for closer cooperation at a European level between training institutions and experienced professionals;

• there is also a need for inter-institutional cooperation at European level to provide high-level language training for future interpreters and translators in less widely used EU languages.

2) Language programmes for students of other disciplines:

• language provision for students of other disciplines must be improved and diversified. The possibilities for learning languages of other participating countries must be extended to a wider population of non-language majors. To this end, new language modules should be developed, preferably through joint programmes carried out by universities from a number of different countries;

• there is a need for general language programmes available across a range of disciplines as well as for discipline-specific programmes. General language programmes should concentrate on languages for academic purposes and on preparation for study abroad. While discipline-specific programmes seem to be particularly relevant to certain subjects like, for instance, business studies and law, efforts should also be made to provide teaching of the content of specific subjects through foreign languages in the students' home universities, preferably by native speakers of the language studied. This is already done in several countries at advanced level — not only in English, but also in German, French and Spanish. To this end, greater use should be made of students and staff on exchange;

• while opinions differed on the place and status of language studies in non-language programmes – should they be compulsory or optional? – there was complete agreement on the need for non-language students to be given credit in some form for any language course followed;

• there is a need to determine, preferably at EU level, recognised levels of performance in languages and to develop a language testing system recognised both by employers and academic institutions. Proficiency tests for students in higher education as well as for language learners in general are available or are currently being developed for a number of languages in a number of EU countries. The European Commission should support a joint project or projects, aimed at determining levels of proficiency for different skills across the whole range of languages. This should include grading scales and further developing and improving testing methods;

• genuine improvement in the area of language provision for non-specialists will only come about if the status of teachers working in this area is improved. This requires recruitment at a high standard of language skills – native or near native – proper training and the carrying out of research in this field. The training of language teachers could be carried out jointly by universities, and the Commission should encourage joint curriculum development in this field, possibly at Master's level. Training programmes should include elements from areas such as applied linguistics and language learning theory as well as practical training. Whereas such training programmes already exist for the more widely used languages, they are non-existent for the less taught languages; this also argues for joint curriculum development. Language teachers should continue to be eligible for European staff mobility programmes;

• the use of new media and new technology has great potential for language programmes for non-language students. This would include video, cable TV, computers, e-mail, Internet, World Wide Web, etc.. The Commission should encourage joint projects aimed at developing the opportunities offered by these media for autonomous learning and distance learning. There is also a great need for self-learning materials and materials development of this kind should be encouraged and supported.

3) Major non-European languages:

• European language policies have so far rightly stressed the importance of promoting the teaching and learning of the less widely used and taught languages of the European Union. However, European language policies also have to take into account the need for continued and increased dialogue with the rest of the world. Support should therefore be given to the joint development of programmes in major non-European languages; such projects should be undertaken jointly with institutions from target-language countries.

C.4. Receptive multi-lingualism

Chair: Christian Wentzlaff-Eggebert;
Rapporteur: Alexander Schwarz

The workshop discussed the topic at two levels: a theoretical, ideological level and a practical, pragmatic level. The discussion centred round a number of axioms put forward by the chairman and the rapporteur.

1) Axiom 1: Multi-lingualism is an important aspect of the richness of European culture. The diversity of languages, including those of minority populations, should be preserved and supported out of respect for the people living in Europe.

- Language is an expression of peoples' identity. People can express and preserve their own identity in situations where they can speak and write their own language. The multi-lingualism of Europe is both an expression of its cultural wealth and a barrier to communication. The linguistic and cultural wealth can only be preserved if a way is found whereby the language barriers can be lowered. Receptive multi-lingualism would seem to be the most promising prospect.
- Language is also an expression of power. Linguistic diversity in Europe has always gone hand in hand with differences in economic and political power. Is it not true that the economically strongest countries in Europe, which represent the "major" languages, decide which languages are used in negotiations etc.? Is not all this talk about "multi-lingualism" and "linguistic diversity" naive, or worse, a deliberate attempt to veil the differences in economic and political power that exist between countries in Europe?
- The discussion of the above points led to the following conclusions:
  - there is a need for clear policies concerning the diversity of languages and cultures in Europe;
  - concrete projects in the field of receptive multi-lingualism have to start from an open and frank debate about the issues involved.

2) Axiom 2: In addition to active foreign language competence, receptive competence in foreign languages should be developed.

- While, over the past few decades the importance of active foreign language competence has time and again been stressed by both political authorities and language experts, long-established methods of developing reading competence – for instance in the area of ancient Greek and Latin – have almost been forgotten and methods of transferring listening comprehension skills from one language to other related languages have not been sufficiently developed. This emphasis on active competence, which for a long time was viewed positively, is seen in a more critical light as English and also French and German, are beginning to threaten the development of less widely used languages in the fields of science and commerce and as mediums of cultural, especially literary, identity.
- Experience has shown that given a sufficiently high degree of motivation, receptive skills can be acquired within a relatively short period of time and it is perfectly feasible to acquire receptive competence in a number of languages. It would seem important to gear programmes aimed at the acquisition of receptive skills to the specific needs of particular target groups.
- In addition, research projects have shown that it is possible, within a short period of time, to acquire reading comprehension for specific purposes simultaneously in a number of languages related to the speaker's mother tongue or to a foreign language in which the learner has acquired a high level of competence. Drawing on these research findings, further projects should be undertaken for other purposes and different groups of languages.

3) Axiom 3: All young Europeans should have communicative competence in two languages from two different language groups and receptive competence in a number of languages belonging to these groups.

- Certain countries in Europe, for example Finland, show that active competence in two languages is possible given the right motivation and circumstances.
- On the basis of active competence in one Romance and one Anglo-Germanic language, receptive competence in a number of languages of the European Union can be acquired within a short period of time if the conditions are right. Every effort should now be made to develop appropriate methods and institutional conditions to make this practicable.

4) Axiom 4: *Apprendre à comprendre les langues.* This axiom has become common practice in wide areas.

- All over the world people are used to conducting bilingual or multi-lingual conversations in which all participants express themselves in their own native languages.
- Students and professionals read specialist texts written in languages of which they do not have a good active command.
- In the cultural domain, we watch originals of films and theatre performances in a number of languages.

5) Axiom 5: A research project should be launched aimed at developing methods for promoting and achieving receptive multi-lingualism.

- In order to arrive at a pedagogic model which takes account of the particular linguistic situation in each country, the project should be carried out by specialists from all the countries concerned. The following steps should be taken by the envisaged group:

– open a debate about multi-lingualism in Europe, collecting and propagating arguments which show that multi-lingualism is necessary and feasible;

– collect and disseminate relevant research findings;

– bring together experts in the field;

– produce and spread teaching and learning materials;

– train and advise language teachers.

- The initiatives outlined above can only succeed if they are supported by academic and political institutions at a local, regional, national and European level.
- Academic institutions and authorities at the various levels should provide financial support for students willing to acquire receptive multi-lingual competence. Multi-lingualism should feature in assessing staff for appointment and promotion at relevant levels in the public sector.

C.5. Intercultural communication

Chair: Luisa Quartermaine; Rapporteur: Althea Ryan

Generally speaking, research and education in intercultural communication is aimed at increasing our understanding of the cultural behaviours and attitudes which determine the ways in which we communicate. Unless they are known to and understood by the parties involved, differences in these behaviours and attitudes constitute often invisible barriers to effective communication across cultures. Practical training in intercultural communication is seen among other things as a means of reducing the adverse effects of stereotyping, as a way of facilitating the mobility of human resources by enhancing skills of situational adaptability and as preparation for working in international and multicultural environments. Particularly with regard to mobility, an internationally recognised form of intercultural certification would be an advantage (with thanks to David Marsh for his ideas and formulations).

With these factors in mind, the workshop on intercultural communication formulated a number of axioms and developed a set of recommendations:

1) Axioms

- It is important to avoid Eurocentricism because:
  – the major languages of Europe are global and multicultural;
  – many of our students do not come from Europe originally.
- Languages, generally speaking, cannot be taught "naked" (i.e. the purely instrumental, "give us vocabulary and grammar that's all we need" attitude).
- Training in intercultural communication theory and skills need not be tied to language teaching:
  – it can be done in its own right i.e. to help prepare students of any subject to go to countries where they do not speak the language; in this sense, it can be a useful means of encouraging students to go on exchanges to countries with seldom learned and taught languages;
  – it can provide a useful bridge between cultural and linguistic disciplines in 'traditional' language/ literature type courses.
- The goals of general intercultural communication courses would be:
  – to arouse intercultural awareness;
  – to train the ability to observe behaviour.

In such courses there would be a focus on awareness of one's own culture and of others' cultural stereotypes of ourselves, as well as on other cultures.

- As a language-related discipline the goals of intercultural communication would be:
  – to provide a content bridge to link language, literature and society elements in courses of studies;
  – to develop intercultural behavioural skills and awareness both generally and between specific cultures;
  – to act as an explanatory discipline in relation to contextual knowledge, e.g. social organisation, literature, history, politics, etc..

2) Recommended action to be taken

The action elaborated below may be achieved through staff exchanges, staff workshops across national boundaries for dissemination and exchange of information and curriculum development projects. The majority or maybe all of these activities and projects would need to be internationally based.

- Preparation of a status report regarding the teaching of intercultural competence in the Member States (not only in relation to European cultures). This report would serve the purpose of pooling existing knowledge and skills and be a necessary preparation for curriculum development.
- Development of a framework for levels and types of skills in intercultural communication in relation to the training of different target groups: students, language students, teacher trainees, language teacher trainees, teachers (in-service courses), teacher trainers/university staff.
- Development of sets of curricular goals for intercultural communication teaching at these various levels and to the various target groups.
- Development and adaptation of methodologies for teaching the various levels and types of intercultural communication skills to these varied target groups.
- Development of content modules of different types and at different levels for each European culture to be used by members of that culture to create self-awareness.
- Work towards an international certification of intercultural training based on the projects outlined above.

C.6. Postgraduate studies

Chair: Frans Zwarts; Rapporteur: Angela Chambers

C.6.1. Definition of area

The topic of the workshop was the possibility of European cooperation in programmes of teaching and research at an M. A. and doctoral dissertation level. Given the importance of language study as a force for greater understanding among speakers of different languages in Europe and the need for more theoretical and empirical research in some areas of language studies, it was agreed that cooperation in this area should be given priority. The success of undergraduate exchange programmes among language students should now be extended to postgraduate level, especially since the number of students concerned is often small.

Despite strong support for this proposal, participants were keenly aware of constraints which could inhibit progress. These include differences in the structure of postgraduate programmes in the various states, perceived differences in the level of study and the lack of internationally accepted systems of equivalencies. The most important sources of variation appear to be the nature of entrance requirements, the length of the programme, the role of the didactic component in relation to research programmes, the position of the supervisor(s) and the admission of external examiners (Doctor Europaeus).

C.6.2. Case Study: European M. A. in Linguistics

Sharon **Millar** (Dense University, DK) gave a short description of the European M. A. in linguistics which has developed from an ICP involving cooperation between several European universities. Her account revealed the complexity of the issues to be resolved and the flexibility needed if such initiatives are to succeed. Areas discussed included the designation of core areas and options, difficulties arising from differences in fee structures, viability of student numbers and accreditation of awards.

C.6.3. Discussion and proposals

The discussion focused on the need for structures which would ensure quality and equivalence in standards. The following were identified as priority areas for future European cooperation:

1) *Course work*

   The tendency to introduce taught courses in research programmes was welcomed. It was agreed that international cooperation in this area would help to make joint courses viable by bringing together small numbers of students from various universities. Cooperation in curriculum development and in the delivery of such courses was recommended.

2) S*ummer and winter schools*

   Summer and winter schools could also be developed as intensive programmes for students from several universities.

3) S*upervisors and external examiners*

   The role of the supervisor or supervision committee and of the external examiner should be discussed, so that joint programmes could be offered with similar or equivalent structures.

4) S*tudy abroad*

   Funding to assist postgraduate students to study abroad was considered to be particularly important. Students should be given the opportunity to study at a university where research expertise is available. In this context, the issue of co-supervision has to be resolved.

5) R*eciprocity*

   It was considered that any attempt to balance the number of exchanges between individual universities would be too restrictive in this context. It was felt that some other mechanism should be found.

C.7. Outlook

1) A large part of the plenary sessions at the Conference was taken up by discussions about future developments envisaged by the Socrates programme, especially concerning the new type of university cooperation projects that have come to be known as “Thematic Networks”. Conference participants were fully aware of the fact that the quantitative and qualitative improvement of the knowledge of the languages of the European Union was to be one of the main objectives of the Socrates programme, that this is an area which calls for the setting up of a thematic network and that the Scientific Committee is seen as a forerunner of the new type of cooperation projects. In fact, a large amount of pertinent advice was offered to the Scientific Committee and a number of participants from representative institutions and associations expressed their interest in becoming involved in any future action the Committee was going to take.

2) Both the National Reports and the workshops at the Conference revealed that there is a high level of awareness inside and outside institutions of higher education of what the current needs in the area of language studies are. Also, as the above recommendations show, experts widely agree on the kinds of action required to meet these needs. However, it also became clear at the Conference that most of the recommendations expressed need further study before they can be transformed into concrete projects and that future projects in this area should be properly coordinated.

3) *European Language Council*

(With thanks to Robert Clark for his ideas and formulations)

- It is against this background that the SIGMA Scientific Committee on Languages proposes to set up, as a permanent forum, a *European Language Council* to serve as an interface between institutions representative of the subject area of language on the one hand and international and European governmental and non-governmental organisations and Member State authorities on the other. The purpose of this *European Language Council* would be to bring a European level of integration to higher education and research in the area of language studies. In particular, it would focus on the social and professional needs of a multi-lingual and multicultural Europe and seek to initiate actions aimed at the improvement and diversification of language teaching and learning. In doing so, it would look at all sectors of education and training, including the links between higher education and school as well as those between the initial and in-service training of language teachers.
- At the national and international level there are many bodies already providing a useful degree of integration in the area of language studies. There are for example, national associations for the study of one national language (and literature) or a group of languages (and literatures) and associations for the study of a particular aspect of pedagogic or professional practice such as foreign language teaching methodology, translation, interpretation, etc.. Some of these bodies work internationally, while some work at a specifically European level. Others are almost entirely unaware of the existence of parallel bodies in neighbouring countries. In addition, there are semi-governmental organisations operating at an international level which have produced a large amount of ideas and practical work relevant to language studies. Finally, there are the Council of Europe and the European Commission and their activities in this field.
- With regard to the measures proposed in the National Reports and at the Stockholm Conference, the *European Language Council* would fulfil two crucial functions: It would pool all the expertise available in this area and it would bring together all the organisations, authorities and institutions whose support is crucial for the putting in place of the measures proposed.
  - In addition, the *European Language Council* would have to address a further two issues:
  - It would have to design and establish links between the areas of education and employment;
  - It would have to reflect on cooperation between the European Union and other continents and propose measures in the area of languages designed to facilitate the cooperation.
- The Scientific Committee proposes that the *European Language Council* should be officially founded at a Conference in the autumn of 1996 or the spring of 1997, to which all bodies currently operating in the field of language would be invited.

Sigma project

Members of the Scientific Committee on Languages

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Conference organiser

Staffan WAHLÉN	Stockholms Universitet (S)

Representative of the SIGMA Executive Committee

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Representatives of European associations

Martin FORSTNER	C.I.U.T.I.
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IX

Women's studies in Europe

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September 1995

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Erasmus report

An assessment of women's studies activities, achievements and needs of institutions which are cooperating transnationally in the subject area of women's studies within 16 Inter-University Cooperation Programmes, 1991-1995.

This report is part of the evaluation of women's studies activities in Europe for the SIGMA network and Directorate General DG XXII (Education, Training and Youth) of the European Commission.

Introduction

This Erasmus report forms an integral part of the evaluation of women's studies in Europe. The evaluation took place between January and July 1995 within the SIGMA inter-university network, on behalf of the of the European Commission (DG XXII: Education, Training and Youth).

The report is the result of an assessment of the activities, achievements, and needs of institutions which are cooperating transnationally in the subject area of women's studies within 16 Inter-University Cooperation Programmes (ICPs) from 1991 onwards (information on ICPs between 1987 and 1991 is not available in the Erasmus archives). ICPs are contracts between the European Commission and institutions in Higher Education which undertake joint activities, such as student exchanges teaching staff exchanges, curriculum development, intensive programmes as part of the Erasmus programme.

The 16 ICPs were identified by the members of the Scientific Committee on women's studies in the SIGMA project[1]. Their help in identifying ICPs on women's studies or on subjects related to women's studies has been crucial, because the Erasmus Bureau does not as yet use a subject area code that could help immediately identify all the women's studies ICPs. Furthermore, it has proved difficult to find integrated women's studies programmes, i.e. programmes which contain elements of women's studies courses within a broader disciplinary field. Therefore this report cannot be taken as an exhaustive study of all ICPs that contain activities in the subject area of women's studies. It quite extensively covers the autonomous and highly visible programmes[2].

The structure of the report is as follows:

- In the first chapter, an analysis is presented of the women's studies ICPs in Europe giving an overview of the functioning of these ICPs: What has been achieved by the partners with regard to student mobility, teaching staff mobility, curriculum developments and intensive programmes? What exactly is the "European dimension" in the women's studies ICPs? Has the academic recognition of study by students at the host universities been a problem?
- The second chapter of this report summarises the problems encountered by coordinators and partner institutions in setting up and running the ICP programmes.

Both chapters are based on the Reports of Activities submitted annually by the coordinators of each programme.

[1] *See page 27*

[2] *The ICP files kept in the archives of the Erasmus Bureau in Brussels form the basis for the analysis of the 16 Women's Studies ICPs. Employees of the Erasmus Bureau have been very helpful in assisting the Junior Researcher in the subject area of Women's Studies (Ellen de Dreu) to prepare this report.*

Chapter I

1.1. Women's studies icps: what has been achieved?

European cooperation in the subject area of women's studies involves men and women from diverse national, cultural and disciplinary backgrounds, speaking different languages, having different expectations about university teaching and working within a variety of intellectual and political perspectives. Surveying the Inter-University Cooperation Programmes in this subject area, one becomes impressed by the quality and quantity of the work done by teachers and students despite, or maybe because of, these differences. The overall evaluation is therefore positive. It should also be noted however that a great deal of the significant and positive achievements rest on the willingness and generosity of coordinators and partners, whose work is often not recognised by their institutions.

In the process of European cooperation, women from countries with strong, institutionalised women's studies departments or programmes work together with women from universities where women's studies has still a marginal position. Experience shows that it was and still is possible to learn from each other, to exchange knowledge and to share experiences of working in the field of women's studies in a variety of cultural and educational structures.

Men and women involved in the ICPs of the subject area of women's studies emphasise that European cooperation is a necessary prerequisite to strengthen the position of women's studies in the Member States of the European Union and the EFTA countries. Conversely, women's studies is also beneficial for the process of European integration[3]. In the process of women's studies harmonisation in Europe, women's studies teachers and scholars are learning to attune their differences without levelling them out. Consequently there is no imposition of one single model of development of women's studies. Their experiences with different approaches to women's studies with their knowledge of concepts such as difference, equality and harmonisation can be valuable to the European Union.

[3] *See: Hanmer, Jalna, Rosi Braidotti, Dearbhal Ní Chártaigh et al,* Women's Studies and European Integration, with Reference to Current and Future Action Programmes for Equal Opportunities between Women and Men. *Report to the Equal Opportunities Unit, DG V Employment, Industrial Relations and Social Affairs, European Commission, Brussels, 1995, V/5760/95-EN.*

Furthermore, women's studies promote equal opportunities by challenging traditional notions of male and female sex-roles. This can be seen most directly at the universities which work in the field of educational studies and teacher training. As shown in this report, this field is prominent among the women's studies ICPs. Two other ICPs study the role of universities — as institutions educating future managers — in putting equal opportunities into practice in the European countries. In general, women's studies equip students with a competitiveness which is useful on the labour market and provides them with tools to analyse and counter discrimination and to improve equal opportunities.

1.2. The european dimension of women's studies

Perhaps the most significant achievement of the Erasmus programmes in women's studies has been to firmly introduce a European dimension into the educational activities in women's studies. The European dimension is multi-faceted, ranging from students studying abroad and experiencing different cultural and academic contexts to comparison of different European teaching methods or actual European issues in teaching: such as citizenship, affirmative action, social policies and multicultural perspectives.

Many of the ICPs in the subject area of women's studies have as their subject matter the process of European integration in relation to the position of women. This is especially true for the ICPs concentrating on intensive programmes. The two programmes focusing on "Women and Management" (D-2068/04 and NL-0106/14) both compare the position of women in the Member States of the European Union. The Irish programme with the title "Issues of equality and non-discrimination in Europe: a pluridisciplinary approach", is constructed around a European agenda. This summer-school focuses among others, on case-studies like, "Affirmative Action and Social Policy" and "Ethic Minorities in a New Europe". The intensive programme on women and geography compares the situation of women in the Southern European countries. The coordinator of the programme on "Homo and Lesbian Studies" (NL-4049/14), emphasises that homosexuality gets a new European dimension in the process of European integration; something which is extensively studied in this intensive programme. The programme WINGS (NL-2023/14) has as its subject, a comparative perspective on the position of women in the Members States of the European

Union and changes in these positions due to European integration. The European network NOISE is working on multiculturalism, which is a very important issue in Europe in view of the rise of nationalism not only in culture but also in education.

Furthermore, it is important to mention that all women's studies ICPs have a notable European dimension because of the impact of cooperation activities on a European level. Exchanges of teachers and students from different countries and common projects are described as very beneficial to all participants.

Men and women involved in European cooperation in women's studies emphasise European cooperation as a necessary prerequisite to strengthening local and national status of women's studies in the Member States of the European Union. Many participants point out that a stronger European network in this field is of ultimate importance in order to strengthen women's studies in countries which cannot offer a programme in this area, for lack of the necessary structures and resources. Furthermore, it is stressed that European cooperation has permitted the consolidation of solid European experiences, refining and questioning the North American hegemony on the subject, both in terms of themes and of teaching material.

Teachers and students have played an active role in academic exchange networks because of the chronic lack of structural resources available to women's studies in many European Member States and EFTA countries. It is also noted however, that many women who were involved in European cooperation in the field of women's studies have been forced to abandon their cooperation projects because of the lack of sufficient resources to support administrative and additional teaching loads associated with a European exchange programme.

1.3. Interdisciplinary women's studies

According to the subject area codes of the Erasmus Bureau, 5 out of the 16 women's studies ICPs are within the field of the social sciences; 4 cover education and teacher training; and 4 represent women's studies in languages and philological sciences. The other 3 programmes are in the fields of business studies, law and geography.

Sometimes the title of the ICP is listed after the subject area code. Of the 16 ICPs, 6 have the title "Women's Studies". Three other ICPs have titles that are related to women's studies ("Equality and Non-Discrimination" and "Gay and Lesbian Studies") or mention the concept of gender in the description of the academic content ("Race and Ethnic Studies in Education").

These 9 ICPs do not represent cooperation between autonomous women's studies departments, institutionalised as an independent area of study offering women's studies diplomas. Only two of the ICPs are actually coordinated by women's studies departments: NOISE (NL 1020/14) and WINGS (NL-2023/14). Their partner institutions include however, both autonomous and integrated women's studies programmes.

1.4. Activities

Within an Inter-University Programme of the European Commission, coordinators and partner institutions can apply for one or more of the following activities: student mobility; teaching staff mobility; joint curriculum development and intensive programmes. It should be emphasised however, that there is a distinction between the activities that were **applied for** by the institutions and activities that were actually **approved** by the Erasmus Bureau.

There seems to be no real preference by the cooperating institutions for anyone of these four activities. Student mobility is applied for in 11 out of the 16 women's studies ICPs. Teaching staff mobility appears in at least one of the yearly applications of 10 ICPs. Joint curriculum development appears in the applications of various years of 8 ICPs. Moreover, 10 ICP coordinators wanted to provide for intensive programmes in one or more of the years in which their programme was functioning.

However, if one looks at the activities accepted by the Erasmus Bureau these figures become totally different, with the exception of student mobility. Three women's studies ICPs could not provide for teaching staff mobility between 1987 and 1994 although they did apply for this activity in one or more years. In 2 ICPs, joint curriculum development was not possible at all, and in 4 ICPs curriculum development was rejected in one year although it did figure in the same ICPs in one or more foregoing years. In 1994/1995, **none** of the ICPs were able to provide for a joint curriculum development programme in the subject area of women's studies.

Intensive programmes seem to be the most difficult activity to get funded: as many as 5 women's studies ICPs that applied for this activity over several years failed to receive any grants at all, and 1 ICP only got funded for 3 years although it applied for intensive programmes over a 6 year period. On the other hand, 3 ICPs do have intensive programmes (D-2068/04, IRL-2012/10 and NL-2042/07). It is worth noting that these 3 programmes only comprise intensive programmes and have no other activities in their ICPs. This suggests that intensive programmes are difficult to fund i**n addition to** other activities, while ICPs that concentrate on intensive programmes do obtain grants. As in the case of joint curriculum development however, it is impossible to trace the reasons for failed attempts in the documents forming the basis for this report (table 1).

For the academic year 1994/1995, the participating institutions in the women's studies ICPs applied for a total of 305 student grants. These 305 students are planned to spend a total of 1730 months at universities in other countries of the European Union or EFTA. However, two of the ICPs

Table 1: Student exchanges in women's studies icps, 1994.

	Host country													
Home country	B	D	DK	E	F	G	I	IRL	NL	P	UK	S	SF	TOT
B		1						1	2		3			7
D					1		1	1	1		1	3		8
DK				2					2	2	5	2		13
E			1		2	2	1	1	4	2	11	4	3	31
F		1		2					1		4	2	1	12
G				2				1	2	2	3	2	2	14
I	1		1	2	1	1		1	2		4	3		16
IRL									1	16	1			18
NL	1	1	2	4	2	3	2	1		2	6	2	2	28
P			2	2		2		16	2		18	4	2	48
UK	1	1	2	10	4	2	3	1	6	18		6	3	57
S		3	2	8	6	2	6		2	4	7			40
Total	3	7	10	35	17	14	14	23	27	48	66	28	13	305

	Home country													
Subject	B	D	DK	E	F	G	I	IRL	NL	P	UK	S	SF	TOT
05			6	12		12			12	18	18	16	10	104
09	2	4		4	4		5		1		10	24		54
14	5	4	7	11	8	2	11	2	15		11		3	79
20				4				16		30	18			68
Total	7	8	13	31	12	14	16	18	28	48	57	40	13	305

	Host country													
Subject	B	D	DK	E	F	G	I	IRL	NL	P	UK	S	SF	TOT
05			6	12		12			12	18	18	16	10	104
09	1	4		8	8		7		1		13	12		54
14	2	3	4	11	9	2	7	7	14		17		3	79
20				4				16		30	18			68
Total	3	7	10	35	17	14	14	23	27	48	66	28	13	305

("Women's Studies in Education" and "Race and Ethnic Studies in Education") were merged in 1994 in the network of the participating universities at large, so it is impossible to account for their women's studies students exchanges. One other ICP did not receive grants from the Erasmus Bureau for student exchanges in 1994 due to an administrative error (D-2010/09).

The first table shows the distribution of the student exchanges across Europe. The two smaller tables show the student/disciplinary background of the exchanged students: 05 is the subject area code for the field of "Education and Teacher Training"; 09 stands for "Languages and Philological Sciences"; 14 means "Social Sciences and Humanities" and 20 is the code for the "Lingua programme" (table 2).

In 1994/1995, the coordinators of 3 ICPs in women's studies successfully applied for a teaching staff mobility programme NL-1020/14 (19 teachers), S-2001/05 (42 teachers) and S-2026/05 (4 teachers). The average stay abroad for these teachers would be a little over one week. The first table shows the distribution of staff exchanges across Europe. These exchanges were all in the field of social sciences and humanities (05) and education studies and teacher training (14), as can be seen in the two smaller tables.

1.5. Institutions

Figure 1 shows the number of institutions per country participating in women's studies ICPs. Figure 2 shows the number of institutions per country coordinating women's studies ICPs.

1.6. Recognition

The institutions participating in the ICPs were very creative in solving the problem of academic recognition. Academic recognition is a difficult matter, because each eligible country has its own system for evaluating the workload of students, meaning that the work of students abroad has to be converted back into the standards of the home institutions. The European Commission has devised a European system for academic recognition, called ECTS (European Community Course Credit Transfer System). In ECTS, 60 credits represent the workload of a year of study; normally 30 credits are given for a semester and 20 credits for a term. ECTS credits are allocated to courses and awarded to students who successfully complete those courses by passing examinations or other assessments.[3]

[3] *Commission of the European Communities, Task Force for Human Resources, Education, Training and Youth (DG XXII),* ECTS: European Community Course Credit Transfer System, *1994.*

Table 2: Staff exchanges in women's studies ICPs, 1994

	Host country													
Home country	B	D	DK	E	F	G	I	IRL	NL	P	UK	S	SF	TOT
B			1											1
D	1										1			2
DK									1			1		2
E						1			2	1	2	1	1	8
F		1												1
G			1	1					1	1	1	1	1	7
I									1					1
IRL	1								1					2
LUX														
NL			1	2		1				1	2	1	1	9
P				1		1			1		2	1	1	12
S			1	1		1			1	1	1			6
SF				1		1			2	2	1			7
Total	3	2	5	8		6			12	8	10	6	5	65

	Home country													
Subject	B	D	DK	E	F	G	I	IRL	NL	P	UK	S	SF	TOT
05			1	6		6			6	7	7	6	7	46
14	1	2	1	2	1	1	1	2	3		5			19
Total	1	2	2	8	1	7	1	2	9	7	12	6	7	65

	Host country													
Subject	B	D	DK	E	F	G	I	IRL	NL	P	UK	S	SF	TOT
05			1	6		6			7	8	7	6	5	46
14	3	2	4	2					5		3			19
Total	3	2	5	8		6			12	8	10	6	5	65

Figure 1: Participating institutions

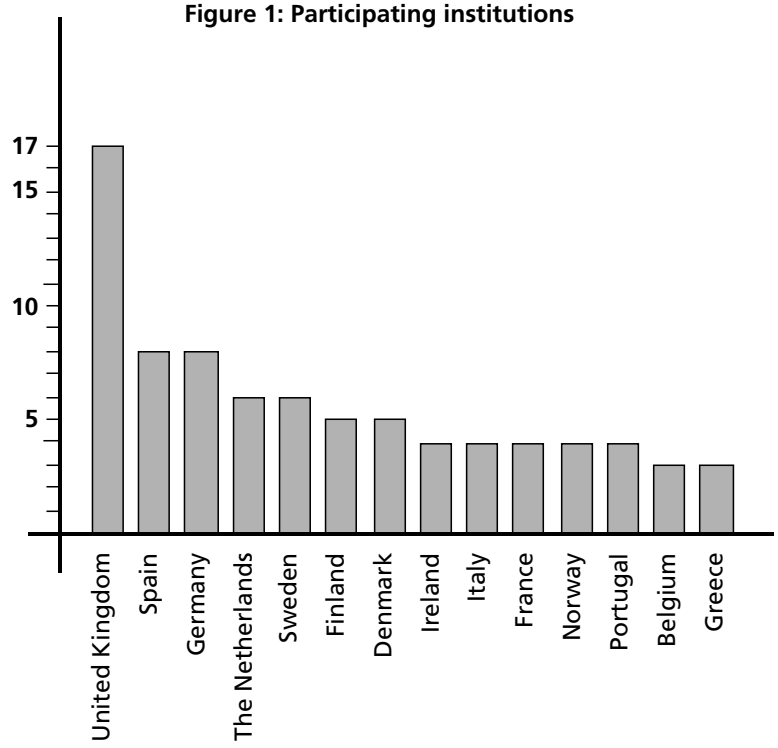
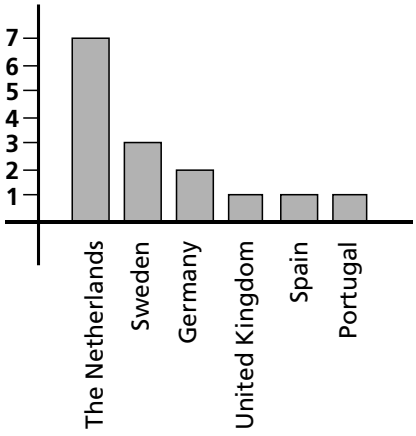


Figure 2: Coordinating institutions



Since ECTS is a relatively new system and was not compulsory for ICPs, only some of the ICPs in the subject area of women's studies mention the ECTS system in their yearly Report of Activities. Prior to working with ECTS, the NESA network (NL-1053/05 and NL-1054/05) devised a system for recognition in which the study-load of students is unified according to a single norm: one week equals one credit point. Furthermore, a mutually recognised European diploma in educational studies is in the making. Likewise, the partners within NOI_SE (NL-1020/14) agreed upon a system whereby the Programme Committees of the home institutions assess the results and recognise the work of students abroad. This ICP also is in the process of developing a common European certificate in women's studies next to applying the ECTS system.

Each of the remaining 12 ICPs have also found ways to ensure that the work of students at the host institutions is recognised within the evaluation system of the home institution. Most of the ICPs that cover intensive programmes have created an international certificate which is recognised by all the participating institutions and/or provide credits to participating students which are recognised by the home institutions. ICPs covering student mobility have all created different systems for recognition. The ICP WINGS (NL-2023/14) even created standardised forms and an elaborate translation scheme for student assessment.

The problems that did arise with academic recognition were solved by systematic communication between the staff of both the home and host institutions. Several coordinators stated explicitly that meetings and exchange visits of the teaching staff of the participating institutions are useful because they provide the opportunity for discussion and consultation on academic recognition.

1.7. Curriculum integration

None of the coordinators of the 16 ICPs mentioned problems with the integration of the work done by students and teachers at European institutions in other European countries within the curriculum of the home institution. On the contrary, the Reports of Activities of all the ICPs concentrating on intensive programmes emphasised that these programmes form an extremely valuable supplement to the regular curricula. This is especially true for the intensive programmes focusing on the position of women and the role of gender in the disciplines that do not cover these subjects in their regular programmes: "Women and Management" in business studies (D-2068/04); "Equality and Discrimination" in European studies (IRL-2012/10); "Feminist Issues" in geography (NL-2042/07); and "Homo and Lesbian Studies" in the social sciences (NL-4049/14). These intensive programmes are indispensable because they provide the only occasion for students and teachers to integrate women's studies into their curricula through working together with colleagues from other participating countries who are also interested in women's studies.

The partners in the ICPs covering student and/or teacher mobility have also found ways to integrate the work by students and teachers at universities in other European countries in their regular curriculum. Students are in general, very positive about the way in which the courses at the host institutions match with what they learnt at home and emphasise the value of studying in other European countries for their own academic development.

Chapter II

2.1. Problems in women's studies ICPs

- **The resources for the financial management of the programme are far too limited to run the ICP successfully. The restriction of 20% of the Erasmus grant for administration costs raises a lot of difficulties in regard to the functioning of the programme.**

The limited funding by the European Union for the financial management of the programme has the effect that only women who can obtain additional financial support from their own institutions are actually able to participate in European Inter-University Cooperation Programmes. Because of the uneven development of women's studies in the European Union, this leads to the paradoxical situation that strong and institutionalised women's studies, located predominantly in the Northern European countries, can benefit from the advantages of European cooperation while weaker and non-institutionalised women's studies — which need to benefit the most from these advantages — are not able to participate. The limited funding thus strengthens rather than solves the problem of the uneven development of women's studies.

The limited funding for the ICPs means the reliance upon the voluntary participation of staff in institutions. Teachers put enormous amounts of time into the Inter-University Programmes without financial incentive or academic recognition for their work. Women's studies teachers are particularly vulnerable as these teachers are already involved in regular women's studies courses without financial backing from their institutions.

The best solution to the problem of unevenness is to increase the coordination capacity in Southern European countries in view of the predominance of Northern European countries in coordinating women's studies ICPs (see Chapter 1, figure 2). The support of the institutions and the European Member States is indispensable in this respect.

- **The difficulties in obtaining funding for language preparation in women's studies ICPs is an obstacle to solving the problem of the uneven development of women's studies in Europe.**

The high costs for language preparation are a serious problem. The Southern European countries, Belgium, the Netherlands and the Scandinavian countries encounter the problem of sending more students and teachers than they receive because of the lack of skills in their languages by students and teachers. The aim of reciprocity in exchanges is therefore not achieved, which is a further obstacle to solving the problem of unevenness in the development of women's studies in Europe.

Lack of skills in a wide range of European languages is an acute problem in view of the aim of harmonising women's studies across Europe. Without skills in the languages of the Southern, the Benelux and the Scandinavian countries, it is impossible to gain knowledge about the wealth and tradition of women's studies in these countries, which could lead to under-representation of these traditions in women's studies European cooperation projects. The financial help of the institutions and the European Member States for language training is essential in order to achieve the aims of European cooperation.

Learning from the literature and teaching methods in women's studies in **all** European countries is also a way of countering the present dominance of North American teaching material in the field of women's studies. The terminology and most of the existing teaching material in this field is currently of North American origin and consequently is available only in English. Thus far, the Inter-University Programmes of the European Commission have been of enormous help in the construction of European teaching material. This material however, is currently not truly European due to the lack of knowledge of women's studies in countries with minority languages. Therefore, more funding is needed to improve European teaching material as part of the harmonisation process.

The language problems also show in teacher staff mobility programmes. The amount of teachers who are capable of lecturing in English is limited. Particular attention is requested by the coordinators for the language training of teachers in order to promote reciprocity in the exchange of teachers across Europe.

- **Student grants are too low. This problem is especially acute for women's studies since students in this subject area are often part-time students, re-entry students, students who are also involved in other disciplines or mature students who have child-care responsibilities.**

These students are more dependent on financial help to fund their stay abroad than full-time students or those students with no children who can be found in other disciplines. Students with children need extra support for their child-care responsibilities. The limited student grants discourage students who do women's studies on top of other studies to give priority to women's studies exchange programmes.

This has the negative effect of weakening European cooperation, since ICP partners who cannot find students who are able to go abroad will have problems continuing their ICP.

- **Women's studies teachers have difficulties in finding time to teach abroad. This problem is aggravated by the lack of academic recognition or financial incentive for the teaching in other European countries by their institutions.**

In the Reports of Activities of ICPs that cover teaching staff mobility, it was signalled that it is often difficult for teachers to withdraw from their regular teaching activities in order to teach abroad. This is particularly problematic in women's studies since the teachers concerned are mostly doing women's studies on top of their teaching in other disciplines. In addition, few women's studies teachers are senior academics (full or associate professors or senior lecturers). This means that most of the women's studies teachers have to ask permission for a stay abroad. The staff of the other disciplines may not always grant this permission.

An additional factor that adds to the problems of teachers going abroad, is that women's studies teachers are in most cases not only involved in academic work, but are also active in social organisations, networks or political groups. Since participation in Inter-University Cooperation Programmes already is a time-consuming activity, going abroad to teach women's studies in other European countries may be an actual impossibility for these women.

- **The harmonisation process in women's studies in Europe encounters major problems because of the lack of opportunities for the strengthening of the women's studies ICPs and the difficulties these ICPs are having with obtaining funding for joint curriculum development and intensive programmes.**

Most of the ICPs in the subject area of women's studies cope with the little money that is available for the programmes as a consequence of the expensive language preparations of students, by cutting in the planned staff meetings. This decreases the quality of the programmes. Staff meetings are crucial for intensifying European cooperation in the field of women's studies. These meetings provide the opportunity for ICP partners to discuss the specific problems of academic recognition, for the drawing of common agendas and for the planning of joint curricula. These joint curricula are essential for the creation of European teaching materials and countering the hegemony of the North American literature in women's studies.

Most important is that during these meetings it is possible for strong and institutionalised women's studies programmes to share expertise and good practice with women who do not have the necessary support in their home countries for their subject area. This is of major importance in a field where support for women's studies is more an exception than a regular phenomenon.

The improvement of the ICPs through staff meetings is a major concern in a subject area where Inter-University Programmes are relatively rare but which are, given the unevenness of women's studies across Europe and the lack of support in many Member States, of extreme importance. In combination with the language problems described above, the lack of opportunities for strengthening women's studies ICPs slows down the process of cooperation and harmonisation and is an obstacle to their development in Europe. This also has major implications for the process of European integration.

The Maastricht Treaty states explicitly that it is the aim of the European Union to achieve equality of opportunities between the sexes. Women's studies can offer the research and training tools necessary to implement the goal of equality. Furthermore, women's studies is promoting equality between the sexes by sensitising people to issues of gender and by training women who can take responsibilities in European politics, economics and culture. The Irish programme (IRL-2012/10) is one example of an Inter-University Cooperation programme that takes the aims of the European Union described in the Maastricht Treaty seriously by studying, "Issues of equality and non-discrimination in Europe." Such programmes must be strengthened and extended.

There is another reason why the obstacles in the process of harmonisation of women's studies are relevant to the process of European integration in general. Women's studies – as a discipline that focuses on questions of equality, differences and diversity – is essential in the creation of a multicultural Europe. Studying differences between women in the European Member States has raised important questions on the position of migrant and minority women in these societies. Not only are there differences between intra-European migrant (especially South/North) women, there are also major differences between European and non-European migrants, especially women of colour within each European country. European cooperation in women's studies requires that these differences be taken into account. The process of European integration can profit from the experiences in women's studies, since the European Union is working on similar concepts such as equality, differences, diversity and multiculturalism. Therefore, the strengthening of women's studies in Europe is in the interest of the European Union.

An important way to transfer the experiences with and knowledge of equality, difference, diversity and multiculturalism in women's studies is through educating young people. As became clear in chapter I, women's studies is very active in this field since no less than 4 out of the 16 ICPs involve educational sciences and teacher training. Another important method of transference is the creation of joint curricula and teaching material. Joint curriculum development programmes and intensive programmes in women's studies thus need to be supported by the European Union, the Member States and EFTA countries and the participating institutions.

2.2. Conclusion

The overall evaluation of women's studies ICPs is very positive. The evidence of the 16 ICPs shows that coordinators and partner institutions have been very active in European cooperation. Their enthusiastic support of the aims of European integration shows in the wide range and the high quality of the activities undertaken under the Erasmus Programme. There is complete consensus among all participants as to how valuable and precious European support has been for the development of this field, not only at the European level but also in the various Member States.

Conversely, it is equally clear from the Erasmus experience, that women's studies is of great value to the process of European integration, since this subject area is in a rare position of analysing issues of both equality and difference. The importance of gender and women's equality to issues of social cohesion, economic harmonisation and cultural integration has been amply demonstrated by the Erasmus activities and needs to be brought to the attention of the European Commission. The overwhelmingly positive evaluation of European programmes and activities by teachers and researchers of women's studies is evidence also of the commitment of this field to further the aims of European integration in education and training. It is equally clear, however, that these aims cannot be achieved solely with the support of the Commission of the European Union, but more efforts are needed at the level of the Member States and individual universities participating in European programmes.

Annexes

List of women's studies ICPs

(ICP code; name of the ICP; coordinating institution)

ICP-D-2010/09
Women's Studies
Universitat-Gesamthochschule Paderborn
Fachbereich 3
Warburgerstrasse 100
D - 33098 Paderborn

ICP-D-2068/04
New European Women - Challenge of Change
Universität Bremen
Institut für Projectmanagement und Witschafsinformatik
Bibliothekstrasse - Postfach 330440
D - 28359 Bremen
Tel: +49-421-218 2350/2710
Fax: +49-421-2182755

ICP-E-1154/14
Women's Studies
Universidad de Granada
Facultad de Filosofía y Letras, Departamento de Pedagogía
Campus de Cartuja
E - 18071 Granada
Tel: +34-58-243659
Fax: +34-58-242828

ICP-IRL-2012/10
Issues of Equality and Non-Discrimination in Europe
University College Dublin
Faculty of Law
Roebuck Castle
Belfield, IRL - Dublin 4
Tel: 353-1-2693244
Fax: 353-1-2694409

ICP-NL-0106/14
Women in a United Europe
Hogeschool van Amsterdam
Sector Maatschappelijke Dienstverlening
Singel 132-134
NL - 1015 AG Amsterdam

ICP-NL-1020/14
Network of Interdisciplinary Women's Studies in Europe (NOISE)
Utrecht University
Dept. of Women's Studies
Kromme Nieuwegracht 29
NL - 3512 HD Utrecht
Tel: +31-30-536013
Fax: +31-30-536695

ICP-NL-1053/05
Women's Studies and Education
Universiteit van Amsterdam
Fac. der Pedagogische, Andragogische en Onderwijskundige Wetenschappen
IJsbaanpad 9
NL - 1076 CV Amsterdam
Tel: +31-20-5253307/2413
Fax: +31-20-5252414

ICP-NL-1054/05
Race and Ethnic Studies in Education
Universiteit van Amsterdam
Fac. der Pedagogische, Andragogische en Onderwijskundige Wetenschappen
Grote Bickerstraat 72
NL - 1013 KS Amsterdam
Tel: +31-20-5253307/2413
Fax: +31-20-5252414

ICP-NL-2023/14
Women's Interdisciplinary Network on Gender and Society (WINGS)
Katholieke Universiteit Nijmegen
Centrum voor Vrouwenstudies
Thomas van Acquinostraat 2
Postbus 9108
NL - 6500 HK Nijmegen
Tel: +31-80-613069

ICP-NL-2042/07
Geography and Gender
Dept. of Human Geography
Faculty of Environmental Sciences
Nieuwe Prinsengracht 130
NL - 1018 VZ Amsterdam

ICP-NL-4049/14
Homo and Lesbian Studies
Faculteit Sociale Wetenschappen - Homostudies
Heidelberglaan 1
NL - 3584 CS Utrecht
Tel: +31-30-534779
Fax: +31-30-531619

ICP-P-3016/20
Portugese and Spanish Language and Literature
Universidade de Coimbra
Faculdade de Letras, Grupo de Anglo-Americanos
P - 3049 Coimbra
Tel: +351-39-25551

ICP-S-2001/05
Teacher Training
University College of Falun - Borlänge
Dept. of Teacher Education
Box 1992
S - 79119 Falun

ICP-S-2026/05
Teacher Training
Escola Superior de Educadores de Infancia Maria Ulrich
Rua do Jardim à Estrela 16
P - 1300 Lisboa

ICP-S-3016/09
Modern EU Languages/Non-EU Languages
Göteborg University
Institutionen för Svenska Spraket
Renströmsgatan 6
S - 412 98 Göteborg
Tel: +46-31-773 45 38
Fax: +46-31-773 46 30

ICP-UK-1450/09
Women's Studies in Literature
Loughborough University of Technology
Department of English and Drama
UK - Loughborough LE 11 3TU

Final report

Final report of the evaluation of women's studies activities in Europe, for the SIGMA Network and Directorate General DG XXII (Education, Training and Youth) of the European Commission.

Aims of this report

On June 16th and 17th 1995, over 200 European experts gathered in Coimbra for a conference which marked the high point in the process of evaluation of women's studies in Europe. This evaluation was held for the Commission of the European Union (DG XXII: Education, Training and Youth) and was commissioned to the women's studies department of Utrecht University by the European SIGMA inter-university network.

The evaluation of women's studies in Europe consisted of two preliminary steps: one is the National Reports on the state of the field of women's studies **within** each Member State of the European Union including Norway, Switzerland and the Baltic countries. These National Reports were drafted by the members of the Scientific Committee, appointed especially for this purpose within the SIGMA network[1]. The second step was the evaluation of all existing Erasmus Inter-university Cooperation Programmes in the field of women's studies, which was carried out by a researcher — Ellen de Dreu — under the supervision of Prof. Braidotti, chair of the Scientific Committee[2].

The aims of the evaluation are three-fold: primarily, to provide an adequate description of the education systems in the European Member States in relation to the development of women's studies within these education systems; secondly to identify new needs in education, training and research for women's studies in Europe, and thirdly to suggest new concrete measures to implement new policies.

The National Reports and the Erasmus report were distributed among the participants of the conference in Coimbra, who were welcomed by the Rector of the University of Coimbra and by Prof. Maria Irene Ramalho Santos, the Portuguese member of the Scientific Committee and organiser of the conference. There were speeches by Prof. Braidotti, Prof. Jalna Hanmer and Prof. Ní Chártaigh respectively on the structure of women's studies in Europe today, on women's studies in relation to the process of European integration and on the role of women's studies in the education of women. In the afternoon, the public participated in policy-related workshops on the following issues:

- Extending the European Credit Transfer System (ECTS) to women's studies;
- construction of European teaching material;
- joint European courses;
- students' involvement in women's studies;
- the link of women's studies to professional opportunities;
- staff exchanges;
- student mobility;
- gender, ethnicity, racism.

Women's International Studies Europe (WISE) also held an information stand. In each workshop, recommendations were formulated for specific action on the institutional, national, and European level, which were presented in a plenary session on the second day of the conference. This session was preceded by a speech by Mrs. Ogden — representative of DG XXII of the European Commission — on the new Socrates Programme. Further information on this new programme was given by Mr. Peltier (DG XXII). Prof. Grementieri, the representative of the SIGMA inter-university network, closed the conference.

This Synthesis report forms the final stage in the evaluation of women's studies in Europe. It draws from the recommendations for specific actions that were made by the following sources: the National Reports; the Erasmus report; the speeches during the conference; the workshops; and written statements by participants of the conference. All the recommendations are organised thematically and sub-divided according to the levels of implementation (institutional, national, European and women's studies community levels).

Towards a working definition of the field

Women's studies have developed over the last twenty five years as the academic extension of the political, cultural, economic and intellectual concerns of the women's movement, which is a social organisation aimed at the advancement of women. They aim at the transformation of education and university curricula in such a way as to reflect and further the social changes in the status of women. In the process of becoming an academic subject, women's studies have engaged in a constructive dialogue with the established academic disciplines, rising issues of multi-

[1] *See page 27*

[2] *See: Rosi Braidotti, Ellen de Dreu, Christine Rammrath,* Erasmus Report: Women's Studies in Europe, *European Commission, DG XXII: Education, Training and Youth, Brussels, 1995.*

disciplinarity and curriculum revision, preferably in a cross-cultural and trans-national perspective[3] .

In the process of European evaluation of this field, we are working with an open definition of women's studies, which respects the great diversity of formats and structures of women's studies education in the different university structures of European countries.

Dearbhal Ní Chárthaigh[4] quotes Farber and Henninger's[5] three models for the development of women's studies institutions and notes that there are not only significant national differences in the development of these models but also distinct institutional paths of development:

- Women's studies centres as a central service institution for the university which does not have a teaching role;
- women's studies as a separate course of study leading to an academic award;
- women's studies research centre with research projects and research schools.

Parallel with these women's studies structures there exists in most universities equal opportunities centres which do not always have effective links to women's studies.

The same diversity is seen in the political agenda and intellectual perspective of each programme and is reflected in the differences in names for the programmes: either women's studies; gender studies; or feminist studies. Despite these differences, a remarkable coalition has emerged between women's studies, gender studies and feminist studies during the Coimbra conference, although for the sake of this report the title "women's studies" has been systematically adopted.

This coalition was possible because, in spite of their different names, there is a consensus on the definition of this field of study as a process of making explicit the lives of women and the gendering of social relations in the widest sense among individuals and collectivities. This definition was formulated by a group of experts in European women's studies who drafted a report on women's studies and European integration[6].

This report points out that women's studies is being developed in all educational disciplines; from humanities through social sciences, biological and, to a lesser extent physical sciences and technology[7], while also developing in bio-technology[8]. Women's studies scholars challenge the male domination of these academic disciplines. They provide methodological and theoretical tools to study the visible and invisible power mechanisms that influence women's access to posts of responsibility in social, economic, political, religious, intellectual and cultural life; they emphasise issues such as culture, sexuality, family, gender-identity and the power of representation and language; they give high priority to women's health issues and to reproductive rights; they contribute to an understanding of the conflicts between paid and unpaid labour, segregation in the labour market, poverty, unemployment and the participation of women in the decision-making process; they favour harmonisation and economic cohesion. They aim at revealing the full extent of women's lives, which has been hidden because men were the predominant subjects and objects of knowledge and most importantly, they aim at improving the status of women in society[9].

Women's studies deals with how to study and remedy the oppression of women in society. It is concerned with issues of commonality and diversity and with equality and difference and, in terms of organisational structures, with autonomy and integration. It is about teaching, research and activism, not as compartmentalised activities, but as flexible and integrated approaches to the analysis of and the response to the social position of women. Women's studies is therefore in a position to make a valuable contribution to questions and issues arising from the process of European integration. Women's studies has

[3] *See for example:* The Development of a European Curriculum in Women's Studies from a Multicultural Perspective, *Report of the NOI_SE Working Conference by Rosi Braidotti & Christine Rammrath, Utrecht, NOISE Coordination, 1993. (tel: +31-30-536013 / fax: +31-30-536695).*

[4] *Dearbhal Ní Chárthaigh,* Facing the Future: Issues and Perspectives in Women's Studies, *paper delivered at the plenary session at the Coimbra conference on women's studies in Europe, June 16-17 1995.*

[5] *Christine Färber & Annette Henninger (eds),* Equal Opportunities for Women at European Universities*, Freie Universität Berlin, Zentrale Universitätsdruckerei, Berlin, 1995.*

[6] *See: Jalna Hanmer, Rosi Braidotti, Dearbhal Ní Chártaigh et al,* Women's Studies and European Integration, with Reference to Current and Future Action programmes for Equal Opportunities between Women and Men*, Commission of the European Union, DG V Employment, Industrial Relations and Social Affairs, Equal Opportunities Unit, Brussels, 1995. V/5760/95-EN.*

[7] *H.A. Logue & L.M. Talapessy (eds),* Women in Scientific and Technological Research in the European Community*, International Workshop organised by the Commission of the European Communities DG XII Science, Research and Development, 15th to 16th February 1993, Brussel, 1993. See also: Ursula Mättig & Brigitte Mühlenbruch (eds),* Promotion of Women in Higher Education/Universities in European Comparison, *Documentation of an international workshop in the course of the Women's Technology Day, Koordinationsprojekt der Bundeskonferenz der Frauen- und Gleichstellungsbeauftragten an Hochschulen, Universität Bonn, 1994.*

[8] *Jalna Hanmer & Ineke van Wingerden,* Women's Perspectives on the Ethical, Social and Legal Applications and Implications of the Human Genome Analysis, *a report commissioned by and submitted to the Biology Directorate, Medical Research Division of the European Commission DG XII Science, Research and Development (contract nr. PL-910-1016), Nr. GENO-0036-GB (EASE).*

[9] *Jalna Hanmer,* Women's Studies Education and European Integration*, plenary session at the Coimbra conference on women's studies in Europe, June 16-17, 1995.*

a contribution to make to the economic and social integration of Europe through analysing and responding to the dynamics that result in the social exclusion, marginalisation and subordination of women. These responses include the processes of diffusion and development of women's studies expertise on issues such as equal opportunities and multiculturalism through formal education. Even though it is unevenly developed throughout the different European countries, women's studies is now sufficiently advanced to be given a European-wide brief to promote, monitor and evaluate progress in achieving equality for women through research and education, including training, demonstration projects and other forms of action research and women's participation. For instance, women's studies scholars recently developed a so-called "Gender Impact Assessment"; a policy evaluation instrument which aims to analyse potential effects of new policy from an emancipatory angle before these plans are implemented[10]. This instrument should be applied to assess the policy of the European Union.

This evaluation has proved beyond any doubt, the high quality of the academic work accomplished by the women's studies community in Europe. It is equally clear however, that the main reason for the success and the academic quality of women's studies is still unpaid or under-subsidised female labour. A great deal of extra time and voluntary work by women has gone into the making of women's studies programmes. In this respect, the different aspects of women's studies evaluation in Europe today converge on one single point: the need for more resources at the institutional, national and European levels. The need has also emerged for stronger European co-ordination and sharing of information about women's studies research and education in the European Union[11].

Furthermore, development is required of the new dimensions of knowledge that are opened by women's studies in its distinctive features: inter-disciplinarity; social relevance; emphasising women's contribution to scholarship and science, the respect for diversity, the criticism of ethnocentrism and the effort to develop multi-cultural curricula and perspectives for research, while doing justice to local, regional and national specificity[12].

This evaluation proves that the field of women's studies has the expertise, the ability and the willingness to play a leading role in transforming European education in such a way as to enhance the dignity and the advancement of women. Thus, the continuing growth of women's studies in the Member States of the European Union has a crucial role to play in the achievement of European citizenship for women.

The following people are kindly thanked for their invaluable contribution to the evaluation of women's studies in Europe:

- The members of the Scientific Committee and their respective institutions;
- Prof. Jalna Hanmer, University of Bradford;
- Liz Ogden and Jean-Marc Peltier of the European Commission DG XXII Education, Training and Youth;
- Prof. Grementieri and Cecilia Costa of the SIGMA network;
- Jeroen Torenbeek and Bettina Nelemans of the Utrecht Network;
- the Erasmus Bureau;
- Maria Irene Ramalho Santos, Filomena Marques de Carvalho, Isabel Gomes and Teresa Pratas of the University of Coimbra;
- all the participants of the Coimbra conference;
- the women's studies department at Utrecht University, especially Anneke van der Meulen.

1. Development of women's studies

1.1. Institutional level

More effort should be made to strengthen and expand existing programmes in women's studies within the Member States of the European Union and associated countries.

Specific recommended actions are:

a) Both autonomous women's studies and women's studies programmes integrated within other departments should be supported; this open approach is especially important considering the interdisciplinary nature of women's studies.

b) Given that women's studies is a new and interdisciplinary subject area it is important to stress the need for flexible education systems in the European institutions of higher education, especially in institutions where women's studies

[10] *Mieke Verloo & Conny Roggeband,* Emancipatie-Effect *Rapportage: Theoretisch Kader, Methodiek en Voortgangsrapportage, Den Haag: VUGA, 1994.*

[11] *An early attempt to record researchers and courses in the European Union was the GRACE project, located in a Belgian women's organisation, les Cahiers du Grif, and funded by DG V. There were seminars and occasional publications. An on-going initiative is the* European Women's Studies Guide*, organised by the association Women's Studies International Europe (WISE) and funded by the Dutch Ministery of Education and Science, the DG XXII (Erasmus) and DG V. (WISE, Utrecht University, Heidelberglaan 2, NL-3584 CS Utrecht, the Netherlands).*

[12] *Helma Lutz,* Obstacles to Equal Opportunities in Society by Immigrant Women, with Particular Reference to the Netherlands, the United Kingdom, Germany and the Nordic Countries, *European Committee on Migration, Steering Committee for Equality between Women and Men, October 1994, EG/MG (94) 8. And: The European Women's Lobby,* Confronting the Fortress, Black and Migrant Women in the European Union*, European Parliament Directorate General for Research, Working Papers, Women's Rights Series E-2, European Parliament: 1995 (tel.: +352-43.00.1 or +32-2-284.21.11).*

does not have an autonomous structure. Thus, more modular degrees and flexible 'pathways' should be organised so as to break the subject/discipline based approach that is still prevalent in European universities.

c) Institutions should be encouraged to establish professorships within the field of women's studies in order to achieve full academic recognition of the field and to ensure the quality of the programmes.

d) Funding for research in women's studies should be increased and more efforts made to hire research staff on a permanent basis.

e) Scholars from women's studies should have their teaching and research work assessed by people with sufficient expertise in this field, so as to avoid bias born of ignorance.

f) The integration of a European multi-cultural dimension into teaching and research activities should be supported, including issues such as ethnicity, racism and nationalism, class and sexual orientation and their intersection with gender.

g) More effort should be made to encourage and to fund women's studies courses at postgraduate level.

h) Institutions are recommended to secure the position of national academic coordinators for women's studies and to establish such positions in cases where they do not yet exist.

i) Institutions are encouraged to expand women's studies in the fields where women's studies have not yet had a large impact, such as natural and medical sciences, technology, engineering and other sciences.

Institutions should support the European cooperation programmes in the subject area of women's studies.

Specific recommended actions are:

a) Financial support from the institutions for the administrative, organisational and educational work by the coordinators and their partners should be increased in order to consolidate the achievements of the women's studies Inter-University Cooperation Programmes under the Erasmus scheme.

b) Institutions should help in the process of professionalisation of the work of coordinators by providing training and management courses.

c) Institutions are asked to provide and promote education courses on European languages for women's studies academics and students.

d) Support from European institutions is needed in bringing the aims and achievements of women's studies to the attention of the Standing Conference of Rectors, Presidents and Vice-Chancellors of the European Universities (CRE).

1.2. National level

The Member States of the European Union and its associated countries should support the development of women's studies in Europe.

Specific recommended actions are:

a) The needs of women's studies should be brought to the attention of the national delegates to the European Parliament so that they can promote women's studies in the various European institutions.

b) Women's studies and research on gender issues in a European perspective could be given a higher priority than it currently has in national research councils and research grants commissions.

c) The creation of visiting professorships (Chairs) in European women's studies is recommended to enable the geographical mobility of leading academics in this field.

d) Age limits for research grants and (visiting) professorships in the field of women's studies should be abolished.

Member States should support women's studies activities within the European Commission Erasmus, Lingua, Tempus, Comett and Socrates programmes.

Specific recommended actions are:

a) European Member States should give extra funds to institutions that actively pursue and follow up on their European commitments within the programmes of the European Union.

b) The Member States and associated countries should be encouraged to provide extra staff capacity for the development of courses and modules on multiculturality, social inequalities and sexual orientation seen from a European women's studies perspective.

1.3. European level

Support for the development of women's studies should be given a higher priority.

Specific recommended actions are:

a) Direct funds for special initiatives through the European Directorates are the most feasible form of support. If even a small amount of the funds usually awarded to natural sciences were available for collaborative research in women's studies it would have a significant impact.

b) Resources have to be allocated to make women's studies activities more permanent. The European Commission could design a programme that rewards Member States which engage themselves in this process.

c) The specific inclusion of women's studies as a qualifying field in the appointment of Jean Monnet Professorships is a way to underline the importance of women's studies to European integration.

d) One important step toward effective growth of women's studies at a European level is a quality assessment of the different structures of women's studies courses in different countries, in order to work towards a common methodology that would improve the European dimension of the programmes, while facilitating the harmonisation of

women's studies education in the European Union. Comprehensive and sustained research is needed to reach an effective methodological comparison across Europe.

e) The organisation of a pan-European forum is recommended to work on the definition of specific evaluation methods that are appropriate to the objectives of women's studies. It should cover issues such as: the role of women's studies for under-represented groups; student satisfaction evaluation; and the role of women's studies in promoting equal opportunities in employment. This should also include evaluation of the access to higher education by women and should not be restricted to a narrow definition of professional opportunities as a criterion for positive assessment.

It is recommended that the interest of women's studies within the new institutional structures of Socrates and their inclusion as a priority area for European exchange projects be safeguarded.

Specific recommended actions are:

a) As a follow-up to this evaluation, it is recommended that the Commission assists in the establishment of a European women's studies organisation linking universities active in the subject area with the purpose of dealing with issues of common European interest, including activities within a thematic network for women's studies.

b) The European Union should introduce experts in the field of women's studies to the negotiation committees for the preparation and consultation preceding the final draft of the Socrates programme.

c) Every university participating in Socrates should be encouraged to develop an interest in women's studies.

d) Systematic monitoring and evaluation should be carried out by experts in the field of all activities and actions under Socrates with regard to equality of access and participation for under-represented groups.

e) Special support should be given to activities and programmes which fully reflect cultural diversity in respect of student membership, design, content and management, delivery and assessment.

f) Women's studies needs its own subject area code under the new Socrates programme so as to increase its visibility and facilitate future evaluations.

g) The European Commission is asked to help solve the financial problems of the women's studies coordinators in the management of the Erasmus programmes by increasing the proportion of the budget currently allocated for administrative expenses (20% of the total Erasmus grant).

h) In European countries without professors of women's studies, there should be possibilities for student and staff mobility programmes, joint curriculum and intensive programmes run by other senior staff.

i) The award of European diplomas and joint degrees in women's studies should be investigated seriously and a task-force set up to this effect.

j) The mobility of non-academic staff such as librarians and information specialists should be supported.

k) Ph.D. students exchange grants (possibly limited to 1-3 months) should be explored.

l) The European Union should encourage existing women's studies networks to extend to the European level. To achieve this aim, special efforts need to be made to ensure the flow of information and the sharing of expertise from the Commission.

m) A special effort should be made to promote the cooperation between women's studies in the European Union and women's studies centres in Eastern and Central European countries. Immediate possibilities should be offered for their affiliation within the women's studies thematic network and staff exchanges.

n) Applications from women's studies in Tempus need to be given more support than they currently receive.

1.4. Women's studies community level

The women's studies community should take Socrates and its facilities for thematic networks as a starting point to upgrade existing European projects, to encourage cooperation between networks and at the same time to create more specialised networks in women's studies.

Specific recommended actions are:

a) The women's studies community should ensure that openness and the sharing of information characterise the efforts in networking.

b) It is recommended that issues of gender, race, class and sexual orientation be prioritised within the Socrates women's studies network.

c) Women's studies should continue Erasmus, Lingua, Comett and other international programmes of women's studies under Socrates and should demand mutual and official recognition of credits acquired within women's studies courses.

d) The European Credit Transfer System should be introduced in European cooperation programmes in the field of women's studies.

e) More attention should be given to representing issues and perspectives related to Gay and Lesbian studies and perspectives in European women's studies curricula.

f) Support is requested to coordinate the institutionalisation and professionalisation of women's studies within the European Expertise Centre on women's studies, which was established in 1995 by DG V.

2. Relevance of women's studies to european integration

In the light of the role it has played and can continue to play in issues related to European integration, it is recommended that

women's studies be identified at the European, national and institutional levels as an important vehicle for:

- The promotion of European policies in the area of equal opportunities in higher education;
- the promotion of gender equality in European social policy and in related areas of training;
- the promotion of a European multi-cultural dimension in teaching and research.

2.1. Institutional level

The findings of this evaluation should be disseminated among universities participating in women's studies Erasmus programmes and other interested institutions and efforts should be made to implement them.

Specific recommended actions are:

a) The institutions are asked to provide for the introduction of a gendered perspective in research and teaching by upgrading studies in women's studies.

b) Gender-sensitivity training courses for all university staff and university policy makers are highly recommended. This training could help fulfil the aim of equal opportunities for women at institutions of higher education.

2.2. National level

Gender sensitivity should be encouraged at all levels of educational planning in order to create a broader awareness of women's issues in Europe among students and professionals. An increased awareness of women's issues might help to forward an appreciation and preservation of diversity in Europe. It might also help to break down inequality and injustice.

Specific recommended actions are:

a) Gender-sensitivity training should be provided for teachers and administrators at all levels of education. This kind of training for teachers at secondary schools is a necessary condition for creating a favourable atmosphere for the implementation of equal opportunities in employment. Women's studies has a vast experience in research on women's issues and can therefore be of major support in providing for gender training to teachers at all levels of education.

b) Historical perspectives on women's emancipation should be introduced in curricula at first and second level schools.

c) In order to transfer women's studies knowledge to vocational education a proper "translation" would have to take place from academic fundamental knowledge to applied sciences, providing students with the knowledge and skills they need in their specific professions. In order to try out such a translation, a pilot project should be funded which aims to develop course material and teacher-training, possibly in the framework of the Leonardo scheme.

d) Member States are asked to enforce the Eurostat recommendations for the systematic collection and analysis of data on education (including women's studies) and employment by gender.

e) Member States are required to evaluate the demand by public and private sector employers for the inclusion of a women's studies component in continuing education and personnel training programmes.

2.3. European level

Considering the relevance of women's studies to the achievement of European integration, it is recommended that women's studies be recognised by the European Commission as a field of strategic importance. Women's studies should be identified as a vehicle for the critical exploration of European social policy given the strength of its interdisciplinary and multicultural approach.

Specific recommended actions are:

a) It is recommended that women's studies be given a European-wide brief to promote, monitor and evaluate progress in achieving equality for women through academic research, education, professional training and action research.

b) Women's studies should be identified as a vehicle for European Union equality policies in promoting economic growth, international competitiveness and in reducing unemployment through exploring and responding to the economic, social and political dynamics that result in women's exclusion, marginalisation and subordination.

c) Women's studies expertise should be used more extensively by the European Commission in the planning and implementation of activities. Specifically, DG V is requested to continue to recognise the value of women's studies in its Action Programmes. Furthermore, it is recommended that DG V and DG XXII cooperate more extensively with each other and with the women's studies community on equal opportunities and other issues relevant to the position of women in a united Europe.

d) The Gender Impact Assessment Instrument (see footnote 9) should be applied to assess European Union policy. As a starting point a pilot study could be set up in which the policy of the European Union on Eastern Europe would be assessed for its impact on gender relations.

e) The European Union is recommended to provide European women's studies with the resources to devise and carry out gender training in education at all levels. Steps should be taken to implement the Resolution of the Ministers of Education within the European Council, approved on May 31st, 1990, on the enhanced treatment of equality of educational opportunity for girls and boys in the initial and in-service training of teachers (90/C, 162/05). The text reads as follows: "The development of women's studies and research on gender issues in

appropriate research institutions, in particular in higher education institutions, in the Member States should be encouraged and the links between those involved in such studies and research and those responsible for the training of teachers should be strengthened."

f) The European Union is recommended to ensure effective feedback mechanisms from teaching programmes in women's studies into policy-making. The process of European integration can benefit from the expertise of women's studies with this harmonisation process because women's studies is working with concepts that are central to the process of European integration, such as equality and difference, diversity and multiculturalism. Furthermore, women's studies has the means to help fulfil the aim, described in the Maastricht Treaty, of reaching equality between the sexes.

g) The use of transnational partnerships in Force, NOW, and Horizon has been effective in disseminating good practice in women's training. Similar schemes should be set up for disseminating good practice and teaching material in women's studies. Special attention should be paid to securing the participation of countries in the former Eastern block as women's studies are going through rapid changes in those countries.

h) It is recommended that a women's studies perspective be introduced in the development of curricular materials on the European Dimension for use in schools and in teacher education.

i) More efforts should be made to finance fundamental research on women's studies.

j) More attention should be given to studies and research projects on migrant and minority women in Europe today. Research proposals could be made under the Fifth Framework Programme on Targeted Socio-Economic Research of DG XII, Area III on Social Integration and Social Exclusion in Europe.

k) The European Union is required to finance a comparative cross-European study of the professional outlets available to women's studies graduates in the context of global participation of women in both university education and the labour market.

2.4. Women's studies community level

The women's studies community should continue and strengthen its contribution to the process of European integration.

Specific recommended actions are:

a) The findings of this evaluation should be made known and forms of implementation be enacted in the short term.

b) A pilot study should be set up to develop course material and teacher-training that aim to transfer academic women's studies to higher vocational education.

3. Joint curriculum development

Higher priority should be given to the development of joint curricula, especially in a multi-cultural perspective, which includes the preparation of new teaching material in this perspective.

3.1. Institutional level

More effort should be made to integrate European joint curricula into existing activities, especially in the form of intensive programmes and summer schools as a way of enriching on-going programmes.

Specific recommended actions are:

a) Institutions are asked to introduce women's and gender issues into curricula that are already dealing with the study of Europe; be it language and culture or history, politics, economics and law. This would enhance a comparative European perspective. Audio-visual material should be added to support the written teaching material.

b) Priority should be given to the development of teaching materials and European modules which highlight the relationships between gender, ethnicity and racism.

3.2. National level

Education Ministries should take steps to facilitate the integration into existing curricula and the academic recognition of European joint curricula, so as to improve comparative perspectives and work towards the harmonisation of different programmes.

3.3. European level

Increased support should be given, under the Erasmus programme, to joint curriculum development activities, intensive courses and summer schools.

Specific recommended actions are:

a) Joint curriculum development needs to be stimulated and funded in this field so as to harmonise women's studies in Europe and to put into practice a truly collective and comparative European education.

b) Women's studies need more opportunities to organise intensive programmes, so as to provide the opportunity for women — often working in isolation within the "traditional" disciplines — to meet with other European colleagues from a range of disciplinary backgrounds and to share expertise and learn from each other. Intensive programmes, such as summer schools, provide them with comparative and cross-cultural knowledge of women's studies theories, literature and curricula. Furthermore, intensive programmes are a necessary complement to regular programmes in training teachers and students to bring new gender perspectives into these programmes.

c) Erasmus Women's studies programmes should have access

to the translation services of the European Union. In order to insure the input of literature and teaching material from all European countries, it is necessary to translate these materials into other languages. These translations are costly; for women's studies this poses an acute problem, because the discipline is relatively new and funding by national institutions is limited.

d) It is necessary to train language specialists in the European institutions and in the European Commission in the terminology and major theories of women's studies. This field has its particular translation problems and different concepts in the various European languages all have their own specific meaning and imply different perspectives. Training language specialists in gender terminology is therefore of major importance in the process of harmonising women's studies in Europe.

3.4. Women's studies community level

Women's studies should be encouraged to develop broader cross-European – especially multicultural – perspectives, while doing justice to specific local situations.

Specific recommended actions are:

a) The input of Central and East European countries in the European women's studies curriculum should be secured and supported.

b) Special efforts should be made to increase the awareness of ethnocentrism in women's studies education and to develop multi-cultural curricula.

c) Instead of relying solely on available North American teaching material, more efforts should be made to write teaching manuals from a European perspective, to translate significant material from a variety of European languages and to respect the diversity of intellectual historical traditions in women's studies.

d) A network of researchers in different European universities should be encouraged and financed, to produce a descriptive dictionary of feminist theoretical terms. Reliable translations of key concepts, based on careful analysis and assessment of the state of the art and taking into account the tradition of European feminism are urgently needed.

e) Efforts could be made to produce a European women's studies thesaurus as a continuation of the Dutch women's studies thesaurus.

4. Teachers

More efforts should be made to improve the status of women's studies teachers by promoting tenured positions and providing adequate funding.

4.1. Institutional level

Too many women's studies teachers are working on a temporary basis and spend too much time negotiating a secure continuation of their own positions. This situation should be improved.

Specific recommended actions are:

a) Financial help from universities is needed for securing the position of women's studies teachers.

b) Institutions should be more generous in giving permission for lecturers to teach abroad. Women's studies teachers are often employed only part-time and are therefore involved in more than one discipline. Furthermore, women's studies teachers are usually found at junior academic level and consequently, they are only able to teach abroad with the permission from the senior staff of the faculties.

c) Teachers should get academic recognition and financial support from their own institutions for their teaching activities in other European countries within the Erasmus programme.

d) Because women's studies is community oriented many women's studies teachers are often involved in activities outside the university. Financial incentives from the institutions can strengthen the implementation of courses in the community; more efforts should be made to provide academic recognition for extra-curricular teaching.

4.2. National level

Better links should be established between people involved in women's studies and those responsible for the training of teachers, in accordance with Resolution 90/c, 162/05 (see recommendation 2.5.3).

Specific recommended actions are:

a) Concrete efforts should be made to introduce a women's studies perspective to national teachers training programmes.

b) Better contacts should be established between women's studies programmes and the Open Universities system.

4.3. European level

The harmonisation process in European women's studies programmes should be supported by the European Commission.

Specific recommended actions are:

a) Family commitments should be taken seriously both in terms of funding, housing and day-care in the planning and funding of teaching staff mobility programmes.

b) Priority has to be given to the organisation and funding of staff meetings in women's studies Erasmus programmes.

c) Attention should be given to the language training of teachers. This is important, primarily in view of the aim of achieving reciprocity in exchanges across Europe; and secondly in countering the problem of the unevenness in

the development of women's studies by securing the input of women's studies programmes from all European countries into European cooperation programmes.

4.4. Women's studies community level

More concrete efforts should be devoted to improving the status and tenure of women's studies teachers at all levels of the education system. Furthermore, teachers should be encouraged to travel to other European countries as guest lecturers.

5. Students

Official recognition should be given to the role students have played in the development of women's studies and more efforts be made to include them in policy-making decisions in this field.

5.1. Institutional level

Special account needs to be taken of the difficulties of mature women students with child-care responsibilities in participating in mobility schemes.

Specific recommended actions are:

a) Additional allowances need to be paid or provisions made for children to accompany students.

b) Institutions should facilitate contacts between local and visiting teachers and studies, for example by implementing a system of personal tutors.

c) Comprehensive facilities need to be provided by the institutions (adequate housing, child-care, disabled people's housing, etc.).

d) Institutions should be more flexible in giving credits for study of women's studies abroad.

e) Institutions should support the language preparation of students in view of the high costs for language courses, which threatens the continuation of many women's studies Erasmus programmes.

5.2. National level

Member States should put pressure, through parliamentary delegations, on the European Commission to sustain student demand, in face of graduate employment, reduction of financial grants to students in the different States of the European Union and budget cuts in the humanities and the social sciences.

Specific recommended actions are:

a) Efforts should be made to find more money for students' study abroad.

b) Special efforts need to be made to abolish age limits for student loans, student grants and research grants at post-doctoral and advance levels.

5.3. European level

Student input in policy-making in women's studies education at European level should be increased.

Specific recommended actions are:

a) Attention should be given to the building and funding of a European women's studies students network in order to secure the input of students at the policy-making level in advising on new directions for education in this area.

b) Funding is asked for students to participate in conferences relevant to women's studies in Europe.

5.4. Women's studies community level

It is recommended that student representation be ensured in all national women's studies association and networks.

Specific recommended actions are:

a) In the interest of students, women's studies programmes should be strategic in choosing partners, in avoiding unbalanced exchanges and in starting small networks.

6. Research on education

6.1. Institutional level

It is recommended that every effort should be made at university level to support and facilitate the research activities funded by the European Commission under Socrates (DG XXII: Education, Training and Youth), the Fifth Action Programme (DG XII: Science, Research and Development) as well as within the Fourth Community Action Programme on Equal Opportunities Between Men and Women (DG V: Employment, Industrial Relations and Social Affairs).

Specific recommended actions are:

a) To encourage European perspectives in research projects concerning university education.

b) Comparative perspectives with non-European countries such as those in North-America, Africa and Asia are necessary to the development of an effective gender-policy in higher education.

6.2. National level

That national science foundations and research-grant institutions should give a higher priority to research activities funded by the European Commission and grant extra support to the institutions which undertake them.

6.3. European level

The European Commission is recommended to support proposals on research in education and training in the field of women's studies.

Specific recommended actions are:

a) Effective links should be established between women's studies education activities under Socrates (DG XXII: Education, Training and Youth) and research activities within the Fifth Framework Programme (DG XII: Science, Research and Development), as well as within the Fourth Community Action Programme on Equal Opportunities Between Women and Men (DG V: Employment, Industrial Relations and Social Affairs) in order to re-integrate education and research activities into European action programmes.

b) Women's studies networks focusing on research questions linked to gender inequality in education should be supported within the Fifth Framework Programme. Research projects studying questions on education and training could be proposed under the Targeted Socio-Economic Research Programme of DG XII on Research on Education and Training.

c) It is recommended to support comparative work on teaching methodologies in order to achieve the aim of sharing expertise and knowledge between women's studies programmes in the different European Member States. These methodologies include, among others, academic styles and pedagogical traditions, and rely on the sensitivity to the different cultural and academic traditions of gender studies in each Member State.

d) The European Commission is encouraged to take note and implement the report on Women and Science (see footnote 7) and to take steps to ensure that women's studies research on science and technology receives adequate funding from DG XII and DG V.

6.4. Women's studies community level

Women's studies should strengthen an international cross-European perspective both in research and teaching.

Specific recommended actions are:

a) Efforts should be made to develop European perspectives in women's studies, which could lead to:

- An enrichment of cross-European scholarships in the field;
- the development of a much needed sensitivity to the impact on women and on gender relationships of the process of European unification and of the internationalisation of the economy as well as an awareness of intra-European Union differences in these matters;
- increased visibility, acceptance and prestige of women's studies, both at a national and European level.

7. Virtual mobility

The development of long-distance learning projects in the field of women's studies should be stimulated and funded.

7.1. Institutional level

Universities should ensure that women's studies departments are equipped with adequate computer and electronic facilities, including access to Internet.

Specific recommended actions are:

a) Training courses on computer technology and new information technology should be made accessible to women's studies staff and to minority women working in the subject area.

b) Information specialists at university level should gain knowledge of all the available bibliographic and information resources for women's studies on Internet and make them accessible to women's studies staff and students.

7.2. National level

Education ministries should assist and fund the efforts conducted by the universities to provide adequate and competent electronic assistance to the field of women's studies.

Specific recommended actions are:

a) Extra funding should be made available for the purchase of electronic equipment to universities that are involved in European activities.

7.3. European level

Considering the fact that students in women's studies are often part-time or re-entry students with child-care responsibilities and considering a general complaint about low student grants that are available within Erasmus and Tempus, strong support should be given to the "virtual mobility" of students. This means that high priority should be given to issues around distance education and curriculum development. The support for distance learning is one way of increasing the European dimension in the women's studies curricula on the one hand, and decreasing the level of unevenness in curricula development in the European Member States on the other. Distance learning, consisting of multi-media products and open learning, is a valuable and cheap instrument to share knowledge. Distance learning is also a good instrument for the transmission of women's studies knowledge to people outside the institutions.

Specific recommended actions are:

a) Pilot studies should be encouraged to explore non-traditional pedagogical means, including audio-visual material and video documentaries, CD-ROM and other "electronic books", on areas of relevance to European women's studies.

b) The establishment of video conferencing and computerised conference systems as a means of implementing "virtual mobility" programmes and to supplement, but not replace, student and staff exchanges.

c) The use of computerised information systems to strengthen international participation in local programmes, both in teaching and in areas of research on education.

d) To explore ways of using the new information technologies to further adult and continuing women's studies education programmes in an international perspective.

e) To ensure effective networking of all the women's studies programmes on the Internet World Wide Web and to facilitate access to as wide a range of women's studies participants as possible, especially to women from minority groups.

f) Special attention should be paid to issues of intellectual property and fair access to information technologies.

g) To prevent users of Internet getting lost in their searches for women's studies topics, a "road map" is developed and put on the Antwerp University server (the World Wide Web address is: http://women-www.uia.ac.be/women, to be used with Netscape, Mosaic, or any other graphical browser). The road map points to the sites on Internet that are relevant for women and women's studies. Support is needed for the regular updating of the "road map".

h) The European Union is asked to fund a pilot study to intensively train young female researchers to use new information technologies because at the moment, Internet is dominated by male users. Furthermore, it has a mostly American presence. The pilot study could be fruitful ground for joint efforts and comparative studies on a European level.

i) A pilot research project should be set up, in cooperation with DG XXII, on how the new information technologies can be put to work for education in women's studies.

7.4. Women's studies community level

The women's studies community should make an effort to extend their use of the information channels about European activities both generally and specifically related to women's studies.

Specific recommended actions are:

a) Computer training courses should be made available at grass-root level, especially among minority women.

b) Stronger ties should be established with the Open University system, with a view to developing joint activities in the field of long-distance education.

8. Information

More efforts should be made to ensure transparency and widespread distribution of information to the women's studies community about European activities of relevance to the field.

8.1. Institutional level

a) More efforts should be made by rectors of higher education institutions concerning the distribution of information on European programmes to women's studies departments.

b) A European exchange bureau at the universities has to be established that can distribute information about women's studies in other countries.

8.2. National level

The European Commission should make sure that women's studies programmes and institutes are on their mailing list and regularly receive all information regarding teaching and research activities organised by the European Commission.

Specific recommended actions are:

a) The national ministries of education should make more efforts to distribute information about women's studies.

b) A special provision of documentation funds for the purchase of women's studies journals and publications from other European Member States for university libraries is called for.

c) Member States are asked to support and promote European publications in the field of women's studies.

8.3. European level

A strong appeal is issued to the Commission to ensure that women's studies groups and organisations are entered in the mailing lists for the activities in the field of teaching and research and that these groups be kept adequately informed of developments in these areas. This is especially important considering the uneven level of institutional and national support that women's studies programmes receive throughout the European Community.

Specific recommended actions are:

a) The whole process of application for funding under the Erasmus, Tempus, Lingua, Comett and Socrates programmes should be clearly explained and should be made more transparent.

b) There is a need for comprehensive information packages to disseminate information on and encourage use of ECTS.

c) Women's studies should be included in the discipline-index of the E*rasmus/Lingua Directory* in order to increase its visibility.

d) The European Union is asked to ensure that all the major publications of the European Commission in areas related to women's studies, emancipation and equal opportunities — including this Final report, the Erasmus report and the National Reports — are available on Internet.

e) The annual update of National Reports on women's studies in each country should be funded, coordinated and distributed by the European Union.

f) The series "Women of Europe" should be taken up again, even in a revised or telematic form.

8.4. Women's studies community level

Women's studies organisations should give a higher priority to spreading information on European activities. WISE can play an important role in this effort (see footnote 10).

Specific recommended actions are:

a) The information about women's studies in European universities should be centralised through the setting up of a European data-base of women's studies courses, research and publications. This should go beyond the mere collection of data and favour an interactive approach, long-distance learning and ensure wide access for students and teachers via Internet. This could be placed within a women's studies centre, which might also develop a strategy for promotion of women's studies and related activities.

b) There should be a European women's studies network newsletter several times a year to ensure all new groupings and activities are published. This newsletter should also be available on Internet.

Annex

Members of the Scientific Committee

Dr. Roberta Maierhofer (Karl-Franzens Universität Graz — Austria)

Prof. Magda Michielsen (Universitaire Instelling Antwerpen — Belgium)

Prof. Kirsten Gomard (Aarhus University — Denmark)

Prof. Ursula Müller (Universität Bielefeld — Germany)

Prof. Margarita Birriel Salcedo (University of Granada — Spain)

Prof. Nicky le Feuvre (Université Toulouse le Mirail — France)

Prof. Liana-Evangelia Sakelliou (University of Athens — Greece)

Prof. Chiara Saraceno (University of Turin — Italy)

Prof. Dearbhal Ní Chártaigh (University of Limerick — Ireland)

Dr. Kjell Soleim (Universiteit i Bergen — Norway)

Prof. Willy Jansen (Katholieke Universiteit Nijmegen — the Netherlands)

Prof. Maria Irene Ramalho Santos (University of Coimbra — Portugal)

Prof. Eva Ericsson (University of Lund — Sweden)

Prof. Kirsi Saarikangas (University of Helsinki — Finland)

Prof. Elizabeth Bird (University of Bristol — United Kingdom)

Chair of the Scientific Committee is Prof. Rosi Braidotti, and the project coordinator is Christine Rammrath (Utrecht University — the Netherlands).

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Teacher Education in Europe

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Teacher education in Europe Evaluation and perspectives

1. General remarks

Major and far-reaching innovations in the field of teacher education (TE) are seen as a pressing need by many professionals. A systematically guided process of innovation would certainly require a great deal of detailed and continuously revised information on the existing problems, their causes and origins. Unfortunately the available information is quite insufficient for precisely defining the real problems and challenges arising in the different TE systems. Apart from experimenting with a structure closely resembling a thematic network, one of the basic aims of the SIGMA project in TE was therefore to at least partly fill the existing gaps. European cooperation and integration puts even higher demands on the levels and quality of information needed for specific action. In the face of such demands the process of analysis and reflection of problems and challenges at the level of TE institutions in a comparative perspective has barely begun and much greater efforts are clearly needed in all Member States to promote this kind of analysis related to the needs of TE institutions.

It is clearly evident from the national reports on TE in the Member States of the EU, prepared for the SIGMA Conference in Osnabrück in June 1995 (see Appendix 1 for list of members of the Scientific Committee) and from the discussions at the Conference itself, that TE is seen by professionals as a field of study and research, having to play a major role in the process of European integration. In terms of the number of students and institutions involved TE is an important area within higher education and should be regarded as a vital element in preparing teachers for an active role in school development. More than one thousand institutions and more than fifty thousand teacher educators are involved in educating more than half a million student teachers receiving an initial education and more than five million teachers participating in in-service activities. On the other hand the potential of TE for European integration has not been fully developed in the past nor has the introduction of a European dimension been sufficiently used for the necessary enhancement of the quality of TE.

TE is characterised by a set of peculiarities and specific structural problems in comparison with other branches of study: One of the principal characteristics of TE is that it involves relations with a vast range of academic disciplines from various faculties and departments (e.g. languages and literature, mathematics, biology, physics, chemistry, history). Thus cooperation between a considerable number of branches of higher education is focused in TE and this is what distinguishes it from other branches of study.

At the same time coherence of the different elements of the TE curriculum is not easily achieved and still represents a major problem in the eyes of most teacher educators. In fact some curricular components seem common to most of the existing models of TE: educational studies/studies in the educational sciences; academic/subject studies; studies in the methodology of subjects/subject didactics and basic experience with teaching practice (an unambiguous terminology is non-existent across cultural contexts and thus these terms are bound to have different meanings in different European contexts). At present the sum of these elements could only be described as a conglomerate to be explained as a result of historical development and not in terms of a rational and plausible division of labour.

Apart from coherence, the place and role of the different elements has always been a controversial subject. Depending on the age group of pupils to be taught and the type of school envisaged as a place of work, differing emphasis will normally be given to the educational sciences as a discipline, to subject didactics and subjects studied. Neither the differences nor the mostly subordinate role of the educational sciences in TE courses in quantitative terms are generally accepted as being well-founded and perfectly reasonable. There is some disagreement about which of the components should see its weight increased in order to improve the quality of TE.

This is also true for relations of TE with schools and at a more general level for relations between initial teacher education, induction and in-service training. There is general agreement that coherence between these elements is unsatisfactory in all models of TE and needs to be substantially increased. However, professionals disagree about whether school-based training or university-based education should be increased and in the same way whether in-service training or initial teacher education should be more emphasised.

It is important to note that TE programmes and courses are organised in different ways in Europe. The universitization process of TE has proceeded in differing ways and at different paces in European countries and TE is thus being offered in a wide range of institutional frameworks and arrangements.

2. Systems and models of initial TE: Institutional, administrative and organisational aspects

The national reports on the state and problems of TE have produced a wealth of information which has not been available elsewhere in this form. As is mostly the case in studies of this kind, a major emphasis has been put on almost all reports on institutional, administrative and organisational aspects of TE. It could be concluded that teacher educators generally attach great importance to these aspects and their impact on the outcome of TE – although it seems doubtful whether in fact they do have this importance. When comparing initial teacher education (ITE) systems and models in this particular perspective, it does not come as a surprise that the overall impression is that of enormous diversity, not of unity, although certain similarities are discernible. Diversity is the result of TE systems having been installed in particular national contexts at different moments in time under particular circumstances and strongly influenced by political argument between parties involved.

2.1. Some similarities and common trends

Nevertheless, some broader and not always consistent patterns and trends in the development of TE systems are detectable in most Member States of the European Union. It is worth mentioning that these patterns and trends have been challenged again in recent years by new leitmotifs.

1. The rules for admission to ITE have been tightened and stricter criteria have been introduced. In most countries applicants to ITE for primary and secondary schools have to hold a qualified school leaving certificate of an upper secondary school which could be obtained no earlier than after twelve years of schooling. In some other countries with the teaching profession occupying a higher status, even stricter criteria for admission are in operation (e.g. Ireland, Finland). In so-called 4+1 models, the successful completion of academic studies in (mainly two) subjects requires a minimum of four years of study before students can apply for admission to ITE and professional training lasting (mostly) one year (e.g. the Netherlands for upper secondary school teachers). In France the successful completion of three years of study at university level is now defined as the general criterion for admission of almost all teacher students to ITE and professional training at specialised institutions, such as the *Instituts universitaires de formation des maîtres*, lasts two more years.
2. The duration of programmes of ITE has been gradually extended. This applies especially to ITE for teachers at pre-primary/pre-school level which has been incorporated into the higher education sector with programmes lasting up to three years (e.g. Belgium, Finland, France, Greece, Portugal, Spain), although in some countries it is located at the upper secondary level of the school system (e.g. Austria, Italy) or in other ways outside universities or below university level (e.g. Germany). With the exception of Italy, the minimum duration of programmes for primary school teachers is now three years of higher education. Other programmes of ITE, organized by universities, for teachers of general subjects at (upper) secondary level require a minimum of four years.
3. (New) Systems of ITE have been introduced in many countries for teachers in the sector of special education and vocational education. This applies especially to ITE for those intending to teach at commercial schools, while problems with ITE for teachers intending to teach at technical schools persist in most countries. Only a few countries (e.g. Germany, Austria) have a long tradition of vocational training in schools and a corresponding system of teacher education.
4. There is a trend towards incorporating all of ITE into the higher education sector and towards universitisation although patterns of this process differ from one country to the next. The process does not only have institutional implications but challenges deeply rooted traditions of distinguishing between different categories of teachers and sometimes produces considerable unrest among teacher educators (e.g. Sweden). Even under changed conditions of formal incorporation, fragmentation and the separation of different types of ITE and their curricula still persist (e.g. Finland, Germany, Spain).On the other hand it can be stressed that through incorporation, aspects of research and development are receiving much more attention in all kinds of TE courses.
5. Many programmes of ITE have undergone a process of being more formalised, standardised and rationalised, although a lack of explicitly defined goals for the professionnal education of teachers seems to persist widely. More specific components have been infused (e.g. specialised studies for different domains of learning) and/or an emphasis on actual subject studies have been introduced into programmes of ITE for teachers at primary level. There have been initiatives to strengthen ties between programmes of ITE and (curricula of) schools, especially for ITE preparing for teaching at the (upper) secondary level and, sometimes even to shift responsibility for major parts of ITE to schools themselves (e.g. Greece, Portugal, Spain).
6. Many programmes of ITE now contain more elements coming under the heading of specifically professional preparation. This is expressed in the growing importance of the sciences of the teaching profession (educational sciences, subject didactics/methodology of subject matter) and of elements of practical training (supervised teaching practice, etc.). The sectors that have benefited most from this trend are in particular: ITE for teachers of general education at (lower/upper) secondary level; and vocational education trainers.
7. In many countries the importance of INSET has been recognised and (sometimes extensive) systems for

INSET have been established (e.g. Greece, Portugal, Spain).

Although the importance of these changes should not be downplayed, it is debatable whether these broader trends and changes/changing patterns:

a) represent only modifications following more of the same philosophy and basically preserving a cult practice of teacher education, or;

b) reflect incremental change and effective adaptations to changed tasks, or;

c) are to be regarded as proof of substantial and successful processes of innovation in teacher education.

2.2. Some differences

It might be asserted that the existing studies reflect the complexity and diversity of systems and models of ITE only to a limited extent. Usually they are based on the idea of producing a description of national systems but then internal differences are neglected as a rule. Even where regions, for example Spain or other administrative units such as the Länder in Germany, are not entrusted with legislative and administrative responsibility for TE, this does by no means exclude the existence of internal differences. There is not too much known about them yet. Against this background the following differences of systems and models of ITE can be listed:

1. ITE systems can be ordered according to the degree of centralisation/decentralisation of political responsibility and the degree of autonomy resulting for the individual TE institution. In fact there are systems based on strict centralisation (e.g. Greece, Italy), on federalism (e.g. Germany, Belgium), on regionalism (e.g. Spain, France) or even on a strong position of higher education institutions themselves. Within this larger context, institutions and programmes of ITE are either strictly controlled by the State by national guidelines or in some countries even by relatively narrow syllabuses; or have a relatively high degree of autonomy.

2. ITE is characterised by differing forms of segmentation in the way ITE for prospective teachers is institutionalised, depending on types of teachers (e.g. pre-primary, primary, lower/upper secondary general education, special education, vocational education). The basic segmentations however, are always:

   a) between general and vocational education;

   b) between primary/lower secondary education and upper secondary education.

3. The institutions are placed at different levels of the education system:

   - ITE for the pre-school sector is located either at upper secondary level (e.g. Austria, Italy), at colleges of ITE (e.g. Belgium), at institutions of higher (vocational) education (e.g. the Netherlands) or at universities (e.g. Finland);
   - ITE for primary schools is based on similar institutional choices. Primary school teachers receive their education at upper secondary level (e.g. Italy), at non-university institutions in the post-secondary sector (e.g. Austria – the Pädagogische Akademie), at colleges of education (e.g. Denmark - the Staatsseminarium), at institutions of higher (vocational) education (e.g. the Netherlands, Portugal) and in most countries at universities of varying nature (e.g. Spain on the one hand and Finland, Germany on the other).
   - ITE for (upper) secondary schools in the sector of general education is by tradition a responsibility of universities although it has to be said, that within this category considerable distinctions are sometimes made between lower and upper level or between teachers for different types of schools (e.g Germany);
   - ITE for schools in the sector of special education;
   - ITE for schools in the sector of vocational education shows a variety of very different solutions which are difficult to translate into a system of simple descriptions even at national level. In some countries there are routes into teaching at vocational schools from vocational education plus work experience, from academic education and from further education (e.g. Denmark). In other countries distinctions are made between compulsory and non-compulsory vocational education, with TE being located respectively in colleges of education and at universities (e.g. Austria). Only in individual cases (Germany) has near-complete universitisation been achieved.

4. Institutions educating prospective teachers have developed very different patterns of organising study programmes. ITE is organised:

   - Under the responsibility of colleges of education as single purpose institutions (e.g. Denmark);
   - as part of institutions of higher (vocational) education (e.g. the Netherlands);
   - in departments of teacher education run under the responsibility of Faculties of Education (e.g. class teachers in Finland);
   - in different (academic) departments which have responsibility only for particular components (e.g. Austria, Germany); in such fragmented structures responsibilities are not always very clear;
   - in a way that responsibilities are distributed among different institutions within a phase structure, the university being responsible for a first and mainly "theoretical" part of TE, local/regional school boards, pedagogical institutes without academic status and schools for the second and mainly "practical" part (e.g. the Austrian model for the education of (upper) secondary school teachers; Germany).

5. Study programmes for prospective teachers are organised and structured widely differing ways:

   - A first distinction to be made is that between concurrent,

integrated and consecutive models. In concurrent models the different components of ITE mentioned above have to be studied in parallel. A great deal of attention is often given to studies in subject matter methodology and teaching practice (e.g. Austria, Belgium, Ireland, the B.Ed. route in England and Wales). Many programmes of ITE for primary school teachers are based on this model. In integrated models the different components are not only offered in parallel but in an integrated way focusing on professionally relevant topics and integrating theoretical and practical studies. In some countries a trend towards integrated models can be observed (e.g. Scandinavian countries, Spain). In consecutive models prospective teachers are required to study academic disciplines/ subjects first – sometimes also the sciences of the teaching profession – and then in a second step professional studies and teaching practice are added on top (e.g. the PGCE in England and Wales). Many programmes of ITE for teachers at (upper) secondary level are organized as consecutive ones (e.g. Ireland, the Netherlands, Portugal, Spain).

- a second distinction to be made concerns moduled and non-moduled models of ITE. Moduled models offer clearly defined units (modules) and it is up to student teachers to take decisions about the sequence in which different modules will be taken. Some Scandinavian countries increasingly offer this type of study organisation (e.g. Finland).
- a third distinction regards so-called one-phased and two-phased models of ITE. In one-phased models the successful completion of studies at institutions of TE enables the prospective teacher to apply immediately for a post on the basis of the university diplomas since he or she is assumed to have acquired all the necessary qualifications for teaching (e.g. Belgium, Italy). In two-phase models the first phase – often reduced to studies in academic disciplines – is followed by school-based training and special theoretical courses mainly dealing with subject methodology (e.g. the German Vorbereitungsdienst; the Austrian Unterrichtspraktikum; Denmark; France). Each phase requires a specific examination (in Germany the 1. und 2. Staatsprüfung, both examinations administered by the State).

6. The curricula and contents of ITE vary considerably. The share of teaching practice in the total time allotted to ITE ranges from almost zero to more than fifty per cent. The same applies to educational studies and subject didactics/subject methodologies as well as to subject studies. An (educational) research component may form an important and integral part of the curriculum (e.g. Finland) or it may be totally absent (e.g. Belgium).
7. Institutions of ITE may have either close links with schools, with the school system and with school improvement, or they may appear to be rather strictly separated from schools. A trend towards closing the gap between teacher education and schools can be observed, sometimes implying a loss of influence of ITE institutions (e.g. school-based teacher education in England and Wales).

2.3. Basic fact: diversity of systems and models

While it is possible to single out elements of similarity and common trends in the development of TE in the national reports, the overall impression at the level of legal norms, administrative structures, institutional framework and organisational standards is that of diversity between the Member States. The phenomenon of diversity can be further stressed if the ideology of being faced with "national" systems of TE was given up. Internal differences within "national" systems of TE are seldom analysed, but if they were, we might even end up in sometimes finding differences and diversity within a "national" system of TE of greater importance than diversity between "national" systems.

3. Processes and results of initial teacher education: the teaching-learning process

Traditionally the analysis of ITE in a comparative perspective is strictly focused on aspects of the legal norms, the administrative structure, the organisational framework and the curricular prescriptions. These are aspects evidently linked to the interest of the State in political and administrative control of the system of ITE. Since the near-totality of those having received a diploma in TE seek employment with the State and since numerically, teachers represent the most important category of civil servants, this interest of the State is easy to explain. On the other hand, an analysis of ITE based on these aspects and nothing else is not without problems.

The first problem lies in the fact that traditionally the description of ITE is based on some non-explicit fundamental assumptions about their political and social functioning and on complete unreflected theories of society and the State. If they were made explicit, they might be formulated as follows:

- The State/government has the absolute *primacy over civil society*. This implies that social reproduction through educational systems, including TE systems, can be regulated completely or almost completely through the *State/government, its interventions and its regulative policies*;
- the reality of educational systems is completely or fundamentally determined by *normative acts* of the State/ government (legal provisions, administrative planning and norms, political intentions and decisions at the level of parliament or at the level of party politics, etc.);
- the functioning of educational systems depends completely or fundamentally on their *organisational structure* as defined in general by State/government institutions;
- the State/government has *reliable information on the problems* which arise in educational systems and on the

proper means to solve these problems. Intervention usually has the intended effect, not counterproductive or contrary ones.

It might be questioned whether any of these assumptions could be substantiated by a thorough analysis of real processes. But here then lies the second general problem. These assumptions are hardly explicit and/or critically analysed as to their validity, e.g. in the case of studies of specific examples on the legislative or administrative side of ITE. Wherever such investigations have been made, the results rather confirmed the hypothesis of links between legislation and the actual transformation of ITE as not being particularly strong and ITE as rather reproducing (more indirect) influences and pressures emanating from civil society. It might also be expected that in the face of the existing diversity of systems and models of TE in Europe and of the experience of individual countries with different systems and models, either existing side by side or at different points in history, attempts had been made at analysing the relative efficiency of these systems. There is no doubt that politicians, administrators and teacher educators have some firmly rooted beliefs and opinions about the validity of choices in the institutional form, the organisational framework and the curricular norms of ITE. Such beliefs include (mostly hidden) assumptions on the outcome of differing arrangements i.e. on the effect they might have on the teaching-learning process and its results. "Good" systems and models are thus distinguished from "bad" or "not so good", on the basis of prejudices and superstition. But the criteria for such distinctions are hardly ever formulated openly and comparative research on the relative merits is practically never conducted.

More or less vaguely, many teacher educators feel today that an enormous mass of problems has indeed accumulated in ITE systems everywhere in Europe. Some tend to think that this would require and justify radical and fundamental reforms, others believe in the beneficial effects of universitisation, longer periods of pre-service training, more practical training, yet another curriculum reform, a compulsory induction period for everybody, a re-organisation of in-service training, etc. It could easily be concluded from the ongoing discussion that, in many respects, it is still very much unclear as to what kind of problems TE is actually confronted with. Research in this area is patently insufficient although there is no lack of opinions, statements, claims, guesses, etc.

This in itself is already not easy to understand but even less so is another fact: There is undoubtedly enough experience in Europe from the last decades with processes of universitisation, of one-phase, two-phase and three-phase teacher education models; of TE with and without professional preparation; of TE without induction periods and with shorter or longer induction periods; etc... Nevertheless, it is extremely difficult to dig up evaluations of any kind of past reforms and this may be one explanation why the same sort of proposals are offered again and again as universal remedies, in some instances for more than a hundred years. This can also be why proposals are more often based on prejudices and vague assumptions than on logic and rational analysis.

With the attention of researchers mainly focusing on aspects of political and administrative control of ITE, with the hidden and unfounded assumptions about the social and political functioning of TE systems involved and with the abstract and formal character of the respective descriptions of systems and models, it is extremely difficult to come to any conclusions about the effects of the teaching-learning process in ITE, be this at national level or in a comparative perspective. Moreover, there is a clear shift of attention involved, away from the teaching-learning process, from problems of enhancing the competences of teacher students, increasing the quality of teaching in everyday situations, improving student-teacher relationships, etc. – this is the third general problem.

Many national reports contain scattered remarks about problems of the teaching-learning process in TE. On the other hand attempts at systematic analysis have hardly been made and this seems to reflect the fact that there is still very little known about it.

3.1. Similarities

Much more comparative research would be needed before a sufficiently precise picture of the reality of the teaching-learning process in ITE can emerge. However, some tentative conclusions can be made on the basis of the national reports and the reflections contained in them. Items mentioned below have not been expressly mentioned in all reports but it could be inferred that they are problems with which teacher educators are indeed faced with all over Europe and not just in individual countries.

1. It seems to be a common problem that the preference structure of teacher-students is heavily biased in favour of subject studies, although there may be some differences between primary and secondary school teachers in this respect. This is of course in-line with the equally heavy emphasis given to subject studies in the official curriculum of ITE for all categories of teachers and the low importance of everything related to the professional education of prospective teachers. It is not exceptional that students themselves do not think highly of the educational sciences and subject didactics, often having doubts and reservations about the scientific status of these disciplines. As a result teachers tend to bring to their classroom teaching the technologies, conceptions and modes of discourse from their subjects.
2. ITE is grappling everywhere with the dualism of academic/school subjects presenting a particular problem for any kind of TE. It has to be taken into consideration that the two sides of the dualism represent completely different traditions, absolutely independent from one another. This puts a big question mark on the role that is traditionally assigned to subject didactics.
3. Curricula and theoretical conceptions in TE in whichever system, are moral in principle, political in their functions and social in origin. This applies also to principles and conceptions of teaching practice. While this is a universal phenomenon, there is an evident

tendency, particularly in the subjects, to ignore these contextual aspects and the effects that might be produced on teaching and learning processes. However, ignoring them does not mean that they disappear or are inexistent.

4. One of the basic problems of ITE in any kind of system is the co-existence of an official and a hidden curriculum, of formal and informal learning processes. The official curriculum tends to be based on an ideology of a national or regional culture, thus disregarding the fact of social selectivity not only at school level but also at higher education level, the hidden curriculum is certainly not neutral with regard to filtering out students according to social origin but is hardly based on national value systems. Co-existence between the official and the hidden curriculum is by no means peaceful and the results of ITE will depend heavily on the degree of interference from the side of the hidden curriculum.
5. Often discussed under the inappropriate heading of "theory and practice in teacher education", there seems to be almost unanimous agreement about the lack of relevance of the kind of segmented knowledge offered in ITE for the professional requirements of school teaching. Doubts have been raised whether teacher educators actually have the necessary knowledge and information available about the requirements of professional practice.
6. Independent of the system or model of ITE, interaction between teacher educators and students is generally characterised by hierarchical relations. This includes a basic orientation of teaching-learning processes on passive learning although the inefficiency and the counterproductive effects of such an orientation are no secret to teacher educators. Like the prevailing conception of school learning, TE follows mostly an information-transmission model. This deeply rooted tradition is manifested in the excessive amount of contact teaching in the form of lecturing, often without any methodological or didactical effort behind it. Probably this is why the pedagogical competences of teacher educators are very often held in low esteem by students.
7. A corresponding negative view of students seems to be a widespread phenomenon among teacher educators in Europe, relating to the selection and self-selection procedures for TE as a branch of study. The intellectual aspirations of teacher students are widely thought to be low by teacher educators and in this context it is often pointed out that teaching is seen only as a second or third choice by students. Although the existence of hierarchies in the choices of students cannot be doubted, the widespread negative image of students might well be nothing but an artefact produced by teacher educators themselves.
8. The expectation that (prospective) teachers would base their teaching on educational theory and/or methodological discussions seems to be over-optimistic. Rather it could be assumed that (prospective) teachers will formulate their intentions and justify their teaching stategies in the light of their personal biography and experiences gained in contexts outside the teacher education courses. The biography constitutes a receptivity or preference structure for certain theoretical starting points and for the understanding of the teacher's job and duties.
9. The available knowledge accumulated in the educational sciences about the limits and disadvantages of the prevailing techniques of evaluation and assessment at school level is generally ignored by teacher educators once it comes to tests and examinations at higher education level. Strategies of the evaluation of TE and student learning processes thus are patently inadequate. They also reflect and reproduce the existing separation and the gap between school teaching and TE since the criteria of success are usually defined in terms of academic standards and achievement but not in terms of the quality of professional practice.
10. It is hardly exaggerated to conclude that ITE in its different organisational forms has an embarrassingly low impact on the teacher-student. The education of teachers does not go much beyond what some have called, "professionalisation without professionalism". With the background of their academic studies and being equipped with a diploma, teachers are generally regarded as having acquired professional status but this does not include the necessary competence for dealing with everyday teaching and learning situations in schools. Looking for reasons, the above-mentioned factors and relations are of course important. However, taking into account the wider context of teaching-learning processes, we find that the problems, changes and transformation of TE systems are nothing but part and expression of ongoing social processes in the wider society, involving groups and individuals, the use of power and resistance, interests and conflicts, bargaining and pressure, decisions and non-decisions, reproduction of inequality and discrimination, innovation and defence of tradition, etc. In short, they involve what some sociologists have called, "the production of politics", always presupposing actors, strategies/policies and conditions under which these policies could be implemented or fail. Analysis of TE in these terms is still in its infancy.

3.2. Some differences

It should be emphasised once again that comparative studies of the teaching-learning process in TE are hard to find and the usefulness of such studies for enhancing European co-operation does not seem to be recognised by teacher educators and politicians alike. As far as the national reports are concerned, the question of differences at the level of teaching and learning is dealt with only in passing remarks.

1. Quite different philosophies regulate the assessment of students in the Member States and it is clearly evident

that conceptions of the knowledge and competence to be acquired and the actual efficiency of teaching and learning are closely tied to the way students are assessed. Even the answer to the question "how do students learn and what do they learn in TE courses" depends very much on the strategies of assessment used. Some countries seem to believe in the validity of permanent testing (e.g. Belgium, the Netherlands), in particular in connection with module-based courses, others prefer to leave students to themselves almost for the entire duration of their studies and basically subject them just to one or two major examinations, one half way and the other at the end of their studies (e.g. Germany).

2. It is not easy to say which factors determine failure drop-out/rates in individual countries (or at individual TE institutions). However, from preliminary evidence it is possible to conclude that there are considerable differences between the Member States, e.g. France and Germany; in this case perhaps depending mainly on admission regulations. There are TE systems with an enormous failure rate/percentage of drop-outs, the dropping-out being either, more or less evenly spread over the duration of studies (e.g. in Germany), or showing a peak at the end of the first year (e.g. at universities in Belgium). There seem to be other TE systems with a very low failure rate.
3. The amount of time reserved by students on average for TE studies seems to vary considerably. Depending on the organisation of studies, on the state of the labour market for teachers, on the attractiveness of studies, on the strictness of demands put on students by the curriculum and probably a host of other factors. Students will in extreme cases spend most of their time in TE courses including work related to them or reserve only relatively small amounts of time for studying, with many variants lying in between. Germany can be regarded as an interesting case, with students spending increasingly more years in TE courses before taking examinations (if they take them at all), but at the same time more and more reduced actual contact hours. It would be much too easy to assume that one explains the other.
4. In recent years some countries have introduced systems of teacher educators being regularly assessed by students and by peer groups (e.g. the Netherlands). In others there is still considerable resistance from the side of teacher educators against being assessed, independent of who does it (e.g. Germany). Whether such assessment will contribute to improving the quality of teaching is not even an open question and expectations in this respect seem to be vastly exaggerated. Neither is it an open question whether improvement of the quality of teaching is meant to be the main purpose of the assessment of teacher educators.

3.3. Basic fact: unity and similarity of processes and results

As a result of the rather fragmentary evidence on teaching-learning processes in TE we might conclude that, to a very large degree, processes of professionalisation are similar in a comparative perspective. Wishing to understand this similarity, it becomes of overriding importance to contextualise teaching and learning processes. TE has numerous links with other areas of social activity and the social process which could certainly be disregarded but which do not simply disappear as a result. Many problems in TE do in fact originate outside TE systems, although this is not to say that there are no home-made problems.

Consequently, problems in TE need to be analysed in social, political and ideological terms, not as a result of any kind of arbitrary decision or personal inclinations but as a result of existing links, influences and mediations. It is a sobering fact that the actual complexity of problems in TE at the level of teaching and learning processes is hardly ever brought to light in relevant research or statements by educational scientists. This might be another reason why most of the proposals made for the reform of TE in past decades have either never been translated into concrete changes or, if changes have been attempted, have largely remained without much effect.

4. New needs and new measures in teacher education

Reading through the national reports, it becomes apparent that it will be necessary to analyse the needs and measures proposed for TE in terms of sources. Needs have in fact been identified from the perspective of different actors. One of the major problems consists in going beyond a mere listing of learning in TE as a passive element, as objects and not as subjects of politics. Evidently, the assumption as such is perfectly in line with the prevailing self-image of governments, parties and politicians.

Since in most Member States TE is located not in the private sector but in the public sector, the most prominent voice in defining needs and measures tends to be that of the State, sometimes supported by consultative bodies. TE programmes are discussed and evaluated at national level, and various State institutions make decisions and identify new needs, new orientations and new activities to which TE institutions, teacher educators, students and researchers react. In many instances needs and measures identified by the State lead to changes which may best be described as contrived and imposed from above. On the other hand this does not mean that top-down policy-making is particularly efficient. Experience in recent years rather testifies to the contrary. In some cases imposed changes are even met by strong opposition from teacher educators and students. Emphasis on quality and quality management in TE as in Germany is one example, the 'de-universitisation' of TE in England is another. New activities and new orientations proposed from above must of course, be regarded as implying changed relations of power and control within TE as reflected also in changes in the modes of governance. However, there are a number of

examples from recent years where new activities and orientations have remained simple paper declarations, thus implying the impossibility of changing relations of power and control.

The influence of other actors participating in identifying needs and measures is often underestimated; above all, that of TE institutions and/or teacher educators themselves. Analysing those needs and the way they are translated into practice reveals conflicts and tensions within a 'national' system of TE. Conflicts are often linked to the fact that TE historically has different roots and that various traditions, philosophies or models exist side by side, with peaceful coexistence being far away. Proposed new activities and orientations as put forward by teacher educators reflect these differences. The perennial – and in most cases completely misguided – discussions concerning the presumed dichotomy between theory and practice in TE is one example. The tensions between universities and (university) colleges as in Sweden are another.

Research and researchers are another factor involved in identifying needs and measures for policy action. Almost all national reports complain about a general lack of TE research and this seems to imply that research is considered necessary by researchers in order to underpin and legitimate effective changes in teacher eduation. On the other hand it will be rather difficult to find typical examples of actual changes being based on research evidence. It is probably true that research *about* TE is a rather neglected field of study. Research *for* TE may be what is desired by many, disregarding the problematic prescriptive or normative research. A critical attitude towards formulating rational policies and towards the sometimes too easy acceptance of new catchy trends is probably necessary. Why is the idea of the "reflective practitioner" readily accepted when the possibilities for action in schools based on reflection are minute for teachers and pupils?

Interestingly, the national reports only rarely mention needs identified by students and seldom discuss new orientations and activities advocated and initiated by prospective teachers. Students are paradoxically present through their absence, and this does perhaps reflect their traditional position in a hierarchical relationship. This does not mean that in concrete teaching-learning processes the attitudes and behaviour of students can be seen as being without influence. Rather the opposite seems to be true, despite their passive and subordinate role. On the other hand new orientations and new activities are often legitimised by reference to students and their alleged demands, rights, needs, etc. It is all done for their own good and with the best of intentions, to produce better teachers and to provide a better variety of teacher education. Students are also often used as guinea pigs when new activities are experimentally introduced and their effects are measured by testing the students.

Beyond these actors, there are others in the wider society like trades unions, teachers' professional organisations, employers' associations, churches, etc. which are practically not mentioned. Certainly this can not be taken as saying that they do not have any influence on educational policy-making. Comparative analysis might yield interesting results in this respect but unfortunately we do not have such analyses.

Bearing the origins of needs and proposed measures in mind, we will point to some of the issues brought forward in the national reports and in the workshops at the Osnabrück conference. Like the descriptions of national TE systems themselves, the proposals are focusing mainly on questions related to the institutional, organisational and administrative aspects of systems and models of TE. Such a focus is not self-evident as has been argued above, and there is a regrettable lack of proposals for innovating teaching and learning processes in TE.

4.1. Universitisation/professionalisation

The issue of universitisation of TE is still very much a problem in some Member States. In some countries (e.g. Belgium) there seems to be an overriding need to modernise a TE system that has not been reformed for more than half a century. In other countries (e.g. Italy) even the establishment of TE as a recognised area seems problematic. In still other countries (e.g. France) universitisation has stopped half way by institutionalising separate university colleges, thus enabling the traditional universities to continue living in peace. In e.g. Finland and Sweden the universitisation strategy seems unquestioned and decisions taken during the last decades have strengthened this tendency. In England and Wales, on the other hand, one might even talk about a "de-universitisation" strategy in view of a trend of major parts of TE being shifted to schools. In Germany full universitisation of almost all categories of teachers (pre-primary teachers being excluded) has been achieved more than twenty years ago but it is very much doubtful whether the expected positive results have really been achieved. At present almost all teachers at secondary schools are educated at university level and the tendency, with some exceptions, is to identify strategies and activities leading to a further increase of university influence over TE (or *vice versa*).

Another need which is closely related to the universitisation process is the "professionalisation project". Teaching is no longer considered to be a job or an occupation. The new orientation consists in declaring that teachers are (or should be) professionals. Accordingly, teachers are seen not as being trained but as being educated. This tendency is also coupled to demand for stressing the research element in TE. Another aspect related to this change is an emerging diversification within TE. Opposing interpretations in this respect are however, obvious – a model of the teacher emphasising common traits on the one hand, a model of a specialist on the other.

The relations between initial (pre-service) and in-service TE are a pressing contemporary dilemma for most countries. Induction periods and in-service activities have emerged as new orientations within TE. There is a recognised need in many countries to integrate these three aspects of TE, e.g. in terms of life-long learning conceptions or models of continuous TE.

Another aspect discussed in many of the National Reports

concerns the relations between what is cross-nationally recognised as the four basic components of pre-service TE, viz. subject studies, methodology/didactics, pedagogy and teaching practice. Particularly the school-based component – teaching practice – seems at present to be in need of new orientations. It has to be kept in mind that this component is still very weak in many countries. This partly explains the emphasis put on induction programmes in some countries where such programmes accordingly are discussed in terms very similar to those used in countries where school-based components within ITE programmes are strong. While the development of new strategies of emphasizing school-based components seems logical at first, many teacher educators feel this to be problematic as well.

Two critical remarks have to be added at this point: One of the strengths of a comparative approach lies in the possibility of evaluating the experiences made in other countries and relating them to problems in one's own country. It has to be reiterated that none of what has been described above as new orientations has not been tried and tested somewhere in Europe. Thus these orientations can only be seen as being new for specific countries, not for all of them. A second remark concerns three areas strangely missing in almost all of the national reports. Looking at what these domains are may lead us to ponder on reasons why they are missing.

a. It is an extremely well-known fact that class (social origin) plays a central role at all levels of the education system, including higher education. Not only do class factors define curriculum content and teaching strategies in higher education/TE, with important consequences for the social selectivity of higher education, but also on the side of students the achievement syndrome, the use of language, the availability of deferred gratification patterns, etc. are directly linked to differential class experiences. All these aspects are part of the perennial problem that nowhere has it been possible so far, in whatever system of schooling, to establish equality in public education, independent of social origin.

b. Countries within Europe have become or are becoming increasingly multi-cultural. Cooperation and exchange between EU countries increases and the European dimension of teaching and TE is being promoted massively. Multi-cultural cooperation and exchange within countries, on the other hand, does not enjoy priority status. Quite the contrary, violent expressions of racism and other forms of intolerance and discrimination are evident in many Member States, promoted by administrations, mass media and parts of the political spectrum. There seem to be major difficulties for immigrants to become teachers themselves, and the increase of the number of such teachers could be regarded as an important need.

c. Then there is the fact that a majority of teachers are women and the continuing feminisation process in teaching is an observable fact. At the level of TE this may not be the case everywhere. Nevertheless the vast majority of students in TE are women. Gender aspects are, however, almost absent in the discussion of current needs and new measures.

4.2. Ways of strengthening the European dimension in teacher education

Many aspects of the present state of teacher education being regarded as very unsatisfactory by professionals are not at all problems of individual Member States but European (if not universal) problems. This has again been made perfectly clear by the SIGMA project in teacher education and the Osnabrück Conference. Hence it seems rather logical from the point of view of the teaching profession to discuss them in a European context and to try to bring about changes through European cooperation.

It was widely argued by participants in the SIGMA project and conference that a broader vision as well as more systematic and coordinated initiatives at all levels will be necessary in order to ensure that TE will be in a position to intensify and enhance the quality of its European cooperation activities as well as to draw greater benefit from European integration. TE itself will have to make a major effort to develop such visions and initiatives but it will certainly need support from higher education institutions, Member States, the European Parliament and the European Commission.

Within the European action programmes (Erasmus, Lingua, Tempus, etc.) TE has met with some difficulties in the past. This has led to a number of special initiatives and pilot actions from the side of the Commission. Statistically TE is now much better represented than two or three years ago according to figures made available for the Osnabrück Conference. However, the more or less satisfactory European average hides a number of problems in detail, among others a very uneven representation of Member States in European action programmes, with large countries like France, Germany and Italy being strongly underrepresented in the category of TE. Thus there is still no reason to believe that in TE, the desired synergetic effects and developments concerning the European dimension have already been achieved in full.

In the National Reports and the discussions in working groups, workshops and the plenary sessions of the SIGMA Conference it was repeatedly emphasized that present short-term and long-term needs in TE can only partly be met on the basis of the separate chapters of Socrates. Efforts should accordingly be made to establish a structure allowing the profession, with the help of Member States, the European Parliament and the European Commission, to create the necessary synergies between different action programmes (Socrates, Leonardo, Tempus, EU-USA, Medcampus, ALFA etc.) and within specific action programmes (in particular Socrates, Leonardo) and to forge much closer links between teacher education, R&D and regional development initiatives.

As far as European cooperation of teacher educators and teacher students in projects and networking is concerned, a number of strategic elements were discussed and translated into proposals and suggestions:

4.2.1. Remove barriers

Facilitate and promote the recognition of diplomas between TE institutions in the European Union. The problem of barriers to student mobility between higher education institutions has been raised again and again in recent years. At least the following factors seem to be involved (different factors would have to be taken into account in the case of staff mobility):

- Admission restrictions;
- recognition problems;
- practical and administrative problems;
- financial problems;
- inadequate information.

In addition particular factors might operate in the case of TE:

- The legal status of teachers/teacher educators;
- the attitudes of university faculty concerning exchange;
- the particular status of part of the TE institutions;
- the course structure and assessment requirements;
- language proficiency.

Among these factors, curricular aspects and the question of recognition of diplomas and certificates seem to play a central role. It was generally accepted by participants that there is an urgent need to devise more efficient strategies for tackling this problem. Extending the ECTS system to TE might be one element in the process. At the same time it was underlined that traditional ways of dealing with the recognition problem, i.e. official negotiations between states on forms of a general recognition of diplomas for specific occupational groups, have been rather limited in their effects. This is also true of existing guarantees of individual rights as in a number of articles of the EEC Treaty (Art. 48, 52, 59 for non-discrimination on the grounds of nationality; Art. 49, 56 for immigration and sojourn in any Member State) and of the decision taken by the Council of Ministers at European level in 1988, about general rules of recognition for academic diplomas, although the minimum of three years study as a condition for recognition seems to be entirely reasonable.

Participants argued that the recognition problem had to be seen as a matter to be dealt with by higher education institutions/TE institutions themselves if they seriously wished to progress on the way towards more intensified European cooperation. Basically, recognition for academic purposes had to be distinguished from recognition for occupational purposes but on the other hand synergies between the two sectors could be imagined. In fact the European Commission is in the process of discussing such synergies right now.

The corresponding Commission document published in December 1994, lists a number of proposals and strategies which should be systematically applied by TE institutions. They include:

- The development of a high quality information pool on educational systems in Europe (offering possibilities of involvement for TE institutions and networks);
- the establishment of networks of higher education institutions;
- the harmonisation of study programmes on the basis of consensus between higher education institutions;
- the encouragement of quality assessment for study programmes and courses/modules.

Such strategies should then enable cooperating TE institutions to come to agreements about equivalence of courses/modules which would greatly facilitate mobility.

4.2.2. Extend the European Credit Transfer System (ECTS) to TE

Student mobility is a predominant element of the inter-university cooperation organized by higher education institutions and promoted by the European Commission to improve the quality of education. The ECTS was developed as a pilot scheme within the Erasmus Programme as a means of facilitating academic recognition for study abroad so that students could move freely within a group of European universities. With the new Socrates action programme, the ECTS system is now moving from its restricted pilot stage towards a much wider use as an element of the European dimension in higher education.

This opens up new opportunities for TE and it was suggested that attempts at introducing the ECTS system into partnerships of higher education institutions should be encouraged as much as possible. ECTS provides an instrument to create transparency, to build bridges between institutions and to widen the choices available to students. The system makes it easier for institutions to recognise the learning achievements of students through the use of commonly understood measurements – credits and grades – and it also provides a means to interpret national systems of credit allocation. The ECTS system is based on three core elements: information (on study programmes and student achievement); mutual agreement (between the partner institutions and the student); and the use of ECTS credits (to indicate student workload). These three core elements are made operational through the use of three core documents: the information package; the application form/learning agreement; and the transcript of records.

Problems with the ECTS system were seen by participants insofar as it had to managed in a way to assure that ECTS and the national credit system (wherever it exists) fit together. This includes questions as to the credit allocation to each unit and the ECTS grading scale and problems stemming from different grading systems in European countries. It was recognised, however, that ECTS is a flexible tool favouring communication and transparences among universities. Introduction of the ECTS system might stimulate reflections within a university about the validity of ist procedures as well

as discussions and comparison of courses (contents, teaching methods, etc.). ECTS might also be regarded as a helpful instrument wherever contacts with partner universities provide a wider choice for students e.g. courses which are not offered at their home university.

It was proposed to extend ECTS also to the postgraduate level of the pre-service education of prospective teachers. As the recognition of study periods and diplomas was seen a prerequisite here, additional efforts, possibly with the help of the European Commission, will have to be made in the area of recognition.

4.2.3. Define core-curricular issues in TE

Participants emphasised that a common core curriculum in no way excludes a national or regional dimension. Identification of a core curriculum is in fact facilitated by three factors:

- The building blocks for the TE curriculum are more or less the same everywhere in Europe: one or more disciplines related to school subjects, educational sciences, methodology/didactics of subjects and practical experience;
- even with regard to theories, themes and subjects covered by the TE curriculum there seems to be a high degree of overlap and similarity between countries in Europe, according to a recent study funded by the European Commission;
- it is of extreme importance that at the level of everyday teaching and learning processes the problems with which teacher educators and students are faced with nowadays in Europe appear to be basically similar;

Thus efforts at more precisely defining a core curriculum might well be worthwhile. One of the areas expressly mentioned as being of utmost importance is that of comparative education. What is needed now in TE programmes is both the freedom, i.e. sufficient time to incorporate it – and the obligation to provide a rigorously designed programme of comparative European education, with the facility for practical placement in other countries. Comparative education could form an essential part of a degree level course in any country, with little fear of criticism on the grounds that it constitutes mere "woolly theory". Unfortunately, this would be more easily said than done. The structure and organisation of national education systems revolve around recurrent ideological or political questions, which blur the basis for transnational cooperation. In many respects this is also true for dominant tendencies in comparative education, and alternative approaches will have to developed for underpinning transnational mobility and cooperation.

4.2.4. Introduce a European dimension into school-based experiences in TE

Two principal points emerged from the discussions:

a) All countries need to understand, in the context of European co-operation in teacher-education, that there are other models of school experience than taking charge of classes. In fact, for purely linguistic reasons, teaching practice abroad, as a *stage en responsabilité,* is a very difficult proposition for students in most countries. We need, therefore, to be aware of other models of school-based work, and to take advantage of them. For example:

- Observation of classes, followed by discussions with the teacher. This necessitates training in *how* to observe – a very useful skill to which students should be exposed;
- observation of the overall organisation of the school, and even of its social and economic contexts;
- development of proposals for change, in the light of fresh information from the observed country;
- team-working with the teacher in the planning of class-work;
- short contributions to lessons, or with small groups of children.

One should quite reasonably ask whether the aim of such European cooperative activities is simply that of acquiring the same skills as one may (as one should) acquire in the home country (and, indeed, if the students are assessed on return home, to check that they have acquired the same skills/made progress in the same ways as their colleagues who did not travel abroad) – or whether such activities should have other aims.

This question is even more important where there are differences between countries in the patterns of school-experience within TE. In fact, we may justifiably consider that teaching in all countries is above all a *culture* (common ways of acting, of thinking) or, better, a sub-culture deeply rooted in the culture of the country.

Practical experiences in foreign schools constitute, above all, a conjunction of cultures. From exposure to this conjunction there may emerge mutual enrichment. Building Europe is not about imposing uniformity, but about enriching its natural diversity. In this respect, we noted and agreed that students returning from abroad have a deeper understanding of immigrant pupils in their home schools. Again, pupils in countries which receive overseas students enjoy and benefit from the experience of meeting a teacher from abroad.

b) If it were a question simply of repeating the same solutions, of *copying* observed practice as an apprentice would, then perhaps the practical training of the performer *as a model* (rather than the more structured preparation required for a professional) would be adequate. However, in these circumstances, practice does not in any structured way educate the individual to conceive appropriate solutions for different situations, each with new demands.

One of the major functions of school-based experiences in TE is to subvert the uncritically accepted value of the students' own experiences as a pupil, to demonstrate to

them that the profession is moving forward, reflecting always on how to improve. The craft skills, largely derived from practice, need to be acquired by beginning teachers. It is a characteristic of the process that these skills are too often perceived by both teachers and students as anti-theoretical, or even anti-intellectual. One of the major problems for TE is how to reconcile these two elements.

In this context, it was noted with regret that there is a recent movement in some of the EU countries to place training more and more in schools, to the manifest detriment of the process by which practice is enriched by theory which itself is constructed from references to a wide variety of different practices. With this in mind, the educative power of dialogue, of discussion between the trainee-teacher, the class-teacher, and the university tutor was emphasised by participants.

It was noted that relevant experiences had already been gained in some Erasmus intensive programmes run by teacher educators. For example:

- Students in a number of different countries prepared a "model" lesson; then they met and presented their lessons to each other, discovering and comparing the different ways in which they had worked, the different "givens" through which they had operated;
- after discussion, with university tutors participating, they prepared new lessons in the light of these fresh ideas. They then gave the lesson in a local school. What was happening now was that the first lesson had been deconstructed and reconstructed anew. Everyone was able to go beyond his/her original model to create something original which was not necessarily an imitation of the culture of the other countries. This process offers one way of validating the extent to which trainee teachers have internalised their experiences.

4.2.5. Enhance the role of research in TE in the context of European cooperation

Many participants at the SIGMA Conference emphasised the urgent need for increasing the role of research *in* TE and *on* TE and particularly the need of giving much more emphasis to introducing students to the results and processes of research. This was seen as a key element in enhancing the quality of school teaching and TE programmes and courses. On the other hand it has to be taken into account that so far much of the available educational research has not been regarded highly by teachers and policy-makers alike. Any attempt in the direction of making educational research a genuine force for change thus presupposes a critical assessment of its role, and new approaches in the production and consumption of research results will be necessary. A large increase in the number of transnational projects is seen by many teacher educators as an important element in facilitating this process. At present such developments are hampered by a predominantly national or even rather "provincial" outlook of educational research in all Member States, especially in comparative education.

4.2.6. Use Open and Distance Learning (ODL) in order to promote European cooperation in TE

There is a general feeling that ODL is a growing issue in European education in general and TE in particular. The concept of ODL is not always perfectly clear and different definitions and descriptions of ODL can be imagined. Concepts used by participants were e.g.:

- Applications of information technology in education;
- computer-assisted learning;
- multiple media education;
- tele-learning;
- flexible and independent learning ("taking responsibility for your own education");
- promotion of intellectual mobility.

As the concept is still evolving, perhaps a single and final definition is not desirable.

It was suggested that TE might benefit from ODL in various ways:

a) **The distance aspect.** With ODL there is no longer a necessity for all students to come to the university for participation in courses. Provided they have a personal computer and a modem, they could communicate with the teacher educator, the tutor and with fellow students via telecommunication. This offers new opportunities of studying at a university or college for those not being able to travel or living in far-off regions. Another advantage lies in the fact that not everything has to be done during normal opening hours/office hours. Depending on the student's personal situation and other duties he or she might have, there is a possibility of following lectures, asking and answering questions at almost any time, e.g. late in evenings.

b) **The methodology aspect.** ODL challenges established ways of thinking about the methodology of teaching. There are more thrilling (and more efficient) ways of teaching than the frontal lectures in a traditional sense. Using new technologies, it becomes possible for students to learn more independently from teacher educators than would normally be the case in a traditional course structure. This might contribute to increasing motivation and responsibility for their own study.

c) **The information aspect.** Students and staff members are put in a position to get linked in networks with other universities and colleges and have access to enormous sources of information not being available at any individual higher education institution, e.g. via the Internet.

d) **The communication aspect.** Under the former Erasmus Programme only a small percentage of students and staff members had the opportunity (or took the opportunity) of participating in a mobility project. Since physical mobility of all students and all teacher educators is a

utopia anyway, and probably not even desirable, other ways of promoting communication and cooperation have to be looked for. One of the answers might be "virtual mobility", with students and teacher educators communicating and exchanging ideas with colleagues in other universities, other countries and other cultures via electronic mail.

Some participants stressed the fact that there are still a number of problems involved in using ODL:

a) **The financial aspect.** It seems that too little money is invested in ODL. Hardware and software are expensive which tends to create gaps in development between rich and poor universities. The possibility of large investments will mainly depend on sufficient numbers of students participating in ODL programmes.

b) **The illiteracy aspect.** Especially in TE institutions a growing illiteracy is becoming manifest. This is distressing if one looks at development in the sector of primary and secondary education. Secondary schools are sometimes much further advanced in comparison with institutions of TE. It seems desirable that TE institutions should inform each other more systematically about new developments in ODL.

c) **The human relations aspect.** Distance learning does very little or nothing to promote human relations. Thus physical mobility can not be regarded as becoming entirely unnecessary with ODL. Cultural differences cannot be overcome by sitting behind machines, and it has to be clearly defined in which phases of learning and for what purposes virtual mobility might be really helpful. Otherwise it cannot fully replace traditional forms of teaching and learning.

4.2.7. Emphasise the idea of continuous TE

Continuous TE and in-service training as an essential part of it constantly give room for heated debates and controversial ideas. In many countries it already seems to be an insurmountable problem of how to conceive and establish a realistic relation between the actual needs of teachers/teacher educators and the objectives laid down in theory. Indeed the central point of in-service training, its top priority, regards the question of who takes the ultimate responsibility for and decision on training activities (channel, objectives, content, etc.).

Although everybody postulates – at least at theoretical level – that true in-service TE cannot exist without the freedom of choice, the system which is in operation or foreseen in many countries reproduces largely the traditional model. Thus it is the traditional circles (ministry of education, universities, specialised centres, general inspectorates, pedagogical councils, etc.) deciding on the training schemes, without properly taking into account the real needs of (potential) participants.

The following types of in-service TE are the most common ones in most countries:

- Introductory training for newly appointed teachers;
- formal retraining courses, often yearly, offered by universities or colleges being responsible for in-service training;
- seminars and practical work placements organised on the initiative of associations and organisations;
- information days organized by pedagogical counsellors, pedagogical institutes, etc.;
- school-based in-service training.

As far as content of training is concerned, it is very often fixed on a purely academic basis, whereas pedagogics and methodology melt together to form a mixture of simplistic and technocratic recipes and strategies for application.

The active participation of teachers in developing in-service training schemes is absolutely essential if the quality of continuous education is to be improved and efficiency to be enhanced. We urgently need to take a completely different orientation towards a scheme designed "à la carte" to meet the diverse needs of individual teachers. One such orientation might be a strategy giving room for and supporting forms of auto-didactical training of teachers.

As all scheduled training schemes are bound to cause particular problems in particular situations, a system of auto-didactical training would not try to formulate questions or provoke appropriate answers in a monolithic and theoretical manner as has often been the case in traditional models of in-service training. Instead it should create possibilities for teachers to formulate their own problems explicitly and enable them to find the appropriate answers. Furthermore a system of open and flexible auto-didactical training would encourage teachers to develop their own opinion and standpoint or to reinforce it, depending on individual needs, and to become more self-assured in their teaching to the extent that such a system offers the possibility of developing conceptual frameworks, hypotheses to be verified and proved and problems to be investigated.

Annex 1

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