



**Third Brussels Colloquium
for User-friendly Product Information**

Vocational Education and Training for Technical Communicators

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Vocational Education and Training for Technical Communicators

All texts are based on the oral presentation.

Introduction to the project TecDoc-Net

Ursula Wirtz, tekcom Germany

TecDoc-Net is a network for a European job profile in technical documentation and for the promotion of vocational education and training of technical communicators in the European Union. It is a networking project with 25 partners in 9 European countries, funded by the EU's Leonardo da Vinci programme.

Background: TCeurope

TecDoc-Net is undertaken by TCeurope, which was founded in March 2002 as a European umbrella organisation for technical documentation. TCeurope aims to contribute to the competitiveness of the European industry by helping to develop European standards for technical communication (TC), to promote a higher quality of product information throughout Europe and to represent the members on the European level.

The founding members were CRT from France, ISTC from the UK, STD from Finland, STIC from the Netherlands, and tekcom from Germany. TECOM Switzerland was not among the founding members but has joined TCeurope meanwhile.

The objectives of TCeurope are ...

- to represent member organisations more efficiently on a European level
- to improve the quality of technical documentation in general
- to promote a more intensive exchange of information and knowledge between specialists in technical communication in Europe
- to standardise qualifications for technical communicators in Europe
- to improve vocational, academic and further training in all European countries
- to develop a European market for jobs and services in technical communication
- to promote and support organisations for technical communication in those European countries where national organisations are still lacking or where the existing ones need assistance.

TCEurope's activities to promote these aims are

- Lobbying in Brussels
- European Colloquia to promote technical communication (TC), to involve EU-departments, and to find ways to contribute to European standardisation
- Working Groups on consumer protection, competition, standards, and education and training.

The working group on Education and Training is part of the project TecDoc-Net.

Why is qualification in technical communication so important?

There is a considerable lack of qualified personnel (in some countries more than in others). TC is mainly done by engineers or marketing people without specialised qualification, which affects the quality of information produced. In addition, regulatory requirements (laws, standards, directives) are to be considered. Product liability is an important point concerning TC. Consumer protection and competitiveness of European industry in general are important issues, too.

Main goals of the working group on education and training are to promote study and training programmes, mainly by giving an impulse to existing institutions to implement them, to introduce qualification standards, and to reach compatibility of contents, diplomas and titles in the different European countries – through standardisation of requirements and qualifications sometime in the future.

How many Technical Writers (TW) are there in Europe?

Table 1 shows the number of TWs in Germany. The figures are results of an empirical survey carried out by tekcom in 2002.

Table 1. How many TWs are there in Germany?

	in %	In numbers
Employees in the industry: dealing with TC	0,33	107 103
Responsible exclusively for TC	0,15	48 683
Employees of service providers: dealing with TC	22,7	34 638
Responsible exclusively for TC	12,0	18 311
People dealing with TC in total		141 741
Responsible exclusively for TC		66 994 47,2%

Starting from the figures in Germany we calculated how many TWs there are in Europe. As basis for calculation we used the industry's share of GDP throughout different European countries as shown in table 2.

Table 2. Share of gross domestic product of value added by industry in EURO (2001)

	GDP	Value added by Industry	Share in percent
Germany	2 071 200	470 080	22,70
UK	1 593 395	312 780	19,63
France	1 463 722	271 764	18,57
Italy	1 220 146	261 046	21,39
Spain	651 641	122 732	18,83
Netherlands	429 172	79 195	18,45
Sweden	244 904	52 579	21,53
Austria	211 856	46 384	21,89
Poland	204 052	43 037	21,09
Finland	135 791	32 863	24,20

Source: Eurostat Database New Cronos, March 2003

Assuming about the same relation between number of TWs and share of GDP of industry, the estimated numbers of TWs in several European countries are shown in table 3.

Table 3. Number of TWs in Europe

Germany	141 741
UK	94 783
France	80 505
Italy	79 088
Spain	37 183
Netherlands	23 995
Sweden	15 978
Austria	14 053
Poland	13 041
Finland	9 958
	510 325

Qualification of TWs

Results of the German survey showed that only a small number of those working in TC have a specialised qualification, as shown in table 4.

Table 4. Qualification of those working in TC

Technical communicators in Germany			
	Industry	Service Providers	Total number
With specialised vocational education	4 177	4 434	8 611
With specialised further training	10 282	5 576	15 858
Without specialised training	92 644	24 628	117 272

(results of a survey carried out by tekcom in 2002)

According to the survey carried out by tekcom in 2002, in Nordrhein-Westfalen, one of the most industrialised regions in Germany, 95% of all technical communicators have no specialised qualification in TC. It appears that this relation is true for other European countries, too, especially when taking into consideration that in Germany there are several programmes and trainings for TWs, as opposed to other countries with less or no such trainings on offer.

The estimated number of TWs needed per year is shown in table 5.

Table 5. Estimated number of Technical Communicators needed per year (35 year career)

		dealing with TC	exclusively TC
Germany	141.741	4.050	1.911
UK	94.783	2.708	1.278
France	80.505	2.300	1.086
Italy	79.088	2.260	1.067
Spain	37.183	1.062	501
Netherlands	23.995	686	324
Sweden	15.978	457	215
Austria	14.053	402	190
Poland	13.041	373	176
Finland	9.958	285	134
		14.581	6.882

Current situation of vocational training and education in the participating countries

One of the first steps of the project was an inventory of existing courses. It is quite difficult to define what a study program for TC is or not, because sometimes subjects of TC are hidden in studies called communication science or information design. The survey

carried out recently by the respective project partners showed the following results:

Universities and Higher Education Institutes offering undergraduate, full time study or post-graduate programmes or courses in TC

Germany	11	Aachen, Aalen, Chemnitz, Flensburg, Furtwangen, Gelsenkirchen, Hannover, Karlsruhe, Leipzig, Merseburg, Ulm
France	8	Compiègne, American University Paris, Paris 7, Lyon, Limoges, Brest, Val d’Essonne, Nancy
UK	4	Coventry, London, Sheffield, Wiltshire
Sweden	6	Eskilstuna, Kalmar, Malmö, Chalmers, Uppsala, Karlstad, Linköping
Austria	1	Krems
Italy	1	Trient
Netherlands	1	Twente (Chair for TC)

Private Training Institutes / Chambers of Commerce offering vocational and / or further training in TC

Germany	6	München, Dortmund, Hamburg, Kaiserslautern, Plochingen, Esslingen
Netherlands	5	Houten, Rijswijk, Bussum, Delft, Eindhoven
UK	4	Cheadle, Glossop, Leatherhead, Marlborough
France	3	Advancia (Paris), CFP-CFTI La Salle (Nantes), DEMOS (distance learning)
Austria	1	Linz
Sweden	1	Göteborg

The duration of these courses differs between a few days and a year or more, and also in level and content. Up to now no training programmes or courses exist in Spain, Poland, and Hungary.

After conclusion of the project, national organisations shall be the main promoters of vocational education and training in their countries. Therefore one of the aims of the project is to strengthen these organisations. There are no TC organisations in Spain, Italy, Poland, and Hungary. TecDoc-Net aims to help founding organisations in these countries. Existing organisations are:

Membership in TC organisations

tekom (Germany)	4.107
ISTC (UK)	1.400
TECOM (Switzerland)	320
STD (Finland)	269
tekom (Austria)	100
CRT (France)	50
STIC (Netherlands)	61

Objectives of the project “TecDoc-Net”

TecDoc-Net contributes to a better qualification of Technical Communicators in Europe through

- Network building
- Knowledge transfer
- Awareness building in the industry
- Promotion of job profile
- Encouraging implementation of study programmes
- Definition of a European job profile
- Definition of a European qualification standard (minimum requirements) in the long run
- Building up national associations for TC in target countries Spain, Italy, Poland as main promoters on a national level
- Consolidating TCeurope as the main promoter on a European level

Project activities to reach these goals are:

- Research on existing study and training programmes
- Target group research in target countries
- A brochure on network
- A web site with information on existing study and training programmes, experts, events
- Two European colloquia in Brussels (this one in 2003 and next in 2005)
- Consultation
- Information days / conferences in target countries as main dissemination instruments
- Development of course profiles

Dissemination instruments of the project are:

- project web site
- bilateral consultation
- information days in target countries
- publication of documentation of European colloquia
- development of study programmes
- conferences of TCeurope member organisations

One special means of knowledge transfer are “Train-the-trainer” workshops, meaning that experts from countries where study programmes exist go to target countries and train people there. This is at the moment planned for Italy.

Next steps will be:

April – July 2003: Creation of an information brochure, translation of the brochure into English, French, Spanish, Italian, Polish and dissemination of the brochure in France, Spain, Italy, and Poland.

April – July 2003: Creation of a project web site

Our vision is:

Technical documentation and product information done by qualified technical communicators in all European countries

Europe-wide standardisation of qualification for TC

Technical Documentation in the Basque Country

Thomas Diedrich, University of Deusto

The Basque Country is situated in the northern part of Spain. Its size is approximately 100 x 100 kilometers and its three main cities are Bilbao, San Sebastián and Vitoria. It is characterized by politics, culture and language which are different from the rest of Spain. In the Basque Country a language is spoken having nothing in common with any other language: *euskera* or Basque.

The traditional industry of the Basque Country dates back many centuries. The area has always been characterized by important industrial activity, mainly due to the metal and machinery sector. Machine tool construction, one of the key sectors, started up at the end of the 19th century and this area is still considered to be the “birthplace of the machine tool”.

One of the main characteristics of the companies in the Basque Country is that most of them are small and medium, usually companies belonging to a family, where no more than 50 people work. There are also some multinational enterprises, mainly belonging to the automotive and their auxiliary sectors (Daimler-Chrysler in Vitoria, Volkswagen in Pamplona). Among the different sectors, the highlight is the above mentioned machine tool sector, with a high percentage of exports. There are also quite a lot of auxiliary companies working for the automobile industry. A third sector includes bus construction, their components, shipyards and services. One of the quite weak sectors in the Basque Country is the software sector, key for any vanguard industry.

Current situation of Technical Documentation

Due to the fact that many of the companies are small and medium sized and are employing staff with a medium educational level (usually vocational training with industrial focus), Technical Documentation is nowadays in a quite precarious situation: In many of these companies there are no responsibilities defined for translation and documentation tasks. Therefore, this “area” has always been thought of as being an annoying obligation.

Moreover, the trend has been to “postpone” this task until the product is finished. To this “discomfort” has to be added the lack of professional training of those in charge of authoring technical documentation. In some of the companies there are persons responsible for these tasks, but they are not trained to face these challenges positively.

Just to illustrate the situation: I once went to a company, and asked for the operator manual for one of the machines that was going to be sent to Volkswagen. This manual had a part list with the different parts’ references written by hand. I asked: And how do you do the drawings of the installation process? Do you use programs such as AutoCAD? The technician took me out of the room to a blackboard and told me: “Here everything is still hand-made.”

In some companies I have also been told that although they know about the great importance of technical documentation, the “great amount of money” they would have to pay for some quality instructions would diminish their product’s competitiveness. Considering that a medium sized company should have at least two technical authors and most Basque companies being medium sized, for many of them this “investment” means considerable added costs.

Possible training scenarios

In view of the obvious educational gaps in technical documentation we noticed in the companies we work with, the following options should be considered to implement step by step a professional profile of technical authors and, at the same time, to emphasize the relevance of technical documentation has as an integrated part of the product:

As a first step of this process, more than a year ago tecom Spain was founded as a first small platform to offer the possibility to exchange current and important information. Up to now, we organized three events. One of them was dedicated to translation, taking place at the University of Deusto, another one was about the “comprehensibility” of technical documentation, taking place in the Technology Park of Alava (Vitoria) and a third one was about documentation management systems, in the Technology

Park of Zamudio. Since last year we have been editing a Newsletter of tecom in Spanish, which is sent every second month to more than 1.000 interested persons. However, until now replies have been moderate. In March 2003 tecom Spain direction held a meeting and decided to undertake a survey. The results will be published soon.

In the educational field, various focuses can be considered. We are trying to introduce a Postgraduate Course at the University of Deusto. We could also think of other educational courses, customized for different companies. However, those are subjects to be developed in the close future.

I would like to finish on a more optimistic note concerning the future. tecom Spain as well as its partner companies together have to face the need and challenge of trying to eliminate the detected educational gap. We have to change the currently negative image of technical documentation and turn it round to make companies understand that only a technical documentation on the same quality level as their products can guarantee their survival in medium and long term. Probably some of our ideas are just “castles in the air” at the moment but we really hope that some day they will be reality.

Where are we in human resources?

Anke Harris, O.B.E., Mapline Engineering

The Technical Communication Industry has to meet extremely high demands and standards. Understanding the latest computers, the different highly specialised software packages which are constantly developed, upgraded or improved, and used on projects in the aerospace, automotive, electronic, rail and consumer goods industry. The information system is becoming more and more complex, and if as a company you do not comply, cannot offer the skills, do not have the technical documentation personnel or cannot get them on a contract basis, certainly in the UK, no company will be considered for a contract within the aerospace industry. The bottom line results drives the Product Support Industry across the board.

Technical documentation is an essential part of the production and distribution processes in all industrial branches, where consumer goods are produced. That's why we need to do more in vocational and other training, whereby creating a learning environment, which will enable staff to continuously up-date their skills.

Quality standards increase continuously due to the technological evolution and stricter legal regulations together with product liability. There is also a great need to translate documents into different languages. Companies urgently, desperately need qualified personnel to meet the demand they find themselves in with technical evolution, quality requirements, globalisation and constant increasing consumer awareness almost overtaking them.

How will globalisation effect our companies, our industry, how will it effect our human resource policy?

The implications of the global economy are common currency: in a world of accelerating change, companies locating and relocating their operations wherever they see greatest economic advantage in terms of labour, infrastructure, access to markets and so on. This is not only a phenomena of big industrial organisations,

even SMEs', the smaller and medium sized companies have to adapt and be aware to support their services constantly to stay alive. Joint funding and partnering is coming in there.

Looking to the end of this decade and beyond, the question is what may lie ahead for us, our companies in Europe, when we may increasingly be confronted by: on the one hand, the growing competitive strength of the high efficiency, high technology, research based economy of the USA; and on the other hand, at what might seem the other end of the spectrum, China and India, with 40 per cent of the world's population, progressively entering the world's markets on a fast increasing scale with wage rates a modest fraction of ours.

To touch first on the USA, underpinning its high technology industries, its universities accounted for 37 per cent of referenced scientific publications in the 1980s and have starred in the Nobel Prize lists. Its industries have spawned advanced technology industry in scale. Its major corporations are household names across the world, and productivity measured in terms of GDP per head, is 45% higher than for example in the UK. Its vitality, its resources, its research base and the ability to adapt to change are awesome.

Turning to China and India for a moment, over the last decade they have enjoyed average annual growth rates of 6 and 8 per cent respectively; they are coming increasingly strongly into the world market.

Answering the challenge

So, what strategy do we in our Industry, the Documentation Industry need to adopt to live with these giants in the next decade of this century, how do we prepare our technical communicators, what kind of training can we offer them, when the full impacts of the competitive challenge will be added to the known challenges of high tech USA?

– I started my European business life over 20 years ago. I believe passionately in Europe and for working together in partnership with customers like the European Aerospace company. Over all these years, I have learnt and experienced that by working together one can benefit from each other. I brought technical com-

municators from different disciplines, background, culture and language together to work on the A320 Airbus project, which entailed communicating with Airbus', our customer's partners in Madrid, Germany or Italy.

Staff in the UK are more flexible and willing to learn. The UK labour laws are more relaxed and staff can be employed on a short term basis, say three months, this can be extended. It is very different in Germany. To find German technical communicators, to work on aerospace, electronic and defence contracts, that is almost unheard of. Labour laws in Germany are a nightmare, and it is extremely difficult to employ people on a contract basis there, a job for life is definitely preferred.

In many European countries technical documentation as a recognised profession still does not exist, France is one of these countries. That again is very difficult, much uphill work of awareness raising of this important profession has to be done.

Technical documentation is produced by engineers and technicians who may have the technical knowledge, but not necessarily the skills for writing, incorporating graphics and have knowledge of highly sophisticated broad spectrum software skills, or writing in simplified English to aerospace specifications. A great concern that must be addressed.

Linked with that, what do our communicators have to be aware of, when working in partnership across borders? – Are we good communicators, are we aware of each others culture, do we have time for that, the unwritten rules that shape the daily conversation? Do we understand the cultural background of co-workers and customers – the difference in customs, values and perceptions of the work process? Do we understand how different communication styles can invite or discourage the response in daily "interactions", manifested in styles of management, attitudes towards hierarchy and approaches to teamwork.

When our technical communicators work in the Netherlands, or in Germany, the language to discuss their project or work task, is English. – We all speak English, why don't we understand each other? Language, is a tool of communication, delivering a message – but it is more than that! It has strengths and weaknesses which project national character and even philosophy. I have attended many technical meetings, which were held in English,

where I had to read between the lines to find out what the customer was trying to say, because his mother tongue was German, and our project manager could only speak English.

A point I want to make, in the context of the need to return again and again to learning throughout life, is the importance that our technical communicators need to enter new areas of knowledge, and engage with life to have a future and be employable.

What does Industry say, what are they looking for, like British Aerospace Systems, UK?

A key requirement to improve the efficiency and service provided to the UK Defence and the Commercial Aerospace Industries, is the provision of accurate and timely technical and support information. Indeed Organisations are realising that good information management is a valuable asset and an essential requirement for the whole product life cycle from cradle to grave in the manufacturing and support environments.

In this new environment information is key to success. The advent of e-business requires getting the right information to the right person at the right time. Any delay or missing element will cost the organisation money. The solution is to consider your information as an asset and manage it in a way that adds value. This is easy to say, but what are the consequences to BAE SYSTEMS if they fail.

Imagine the scenario where the asset management is linked to a performance guarantee, either directly or indirectly. Failure to provide the information to efficiently maintain and operate the asset will have direct financial impact.

It is worth emphasising that BAe Systems' view is, that they need a new 'breed' of engineers with additional attributes:

- An awareness of the importance of the content and interpretation of the data by the end user
- Challenging nature
- "Can-do" attitude
- Self-developers
- Entrepreneurial, commercial outlook
- Good inter-personal and customer skills

They are transforming the technical communicator into a 'multi-skilled' Engineer capable of providing integration skills across the product and leading the engineering to satisfy their increased customer expectations and improve their internal performance objectives.

Conclusion

In conclusion, we have heard what Industry had to say and it is important to remember the programmes are industry led. Globalisation has brought a change in the tasks technical communicators and translators have to fulfil. In some ways it causes professional profiles to converge.

As a consequence, degree and other training programmes have to be adapted. In future, existing programmes need to be modernised and inter-connected to keep pace with the developments of globalised companies.

Our concern today is, how do we make our technical communicator workforce fit to work in Europe, and to work across European borders. This Leonardo – TecDoc-Net project is a way towards that.

tekomp Concept for Concurrent Education for Technical Communicators

Prof. Rolf Schwermer, Fachhochschule Hannover

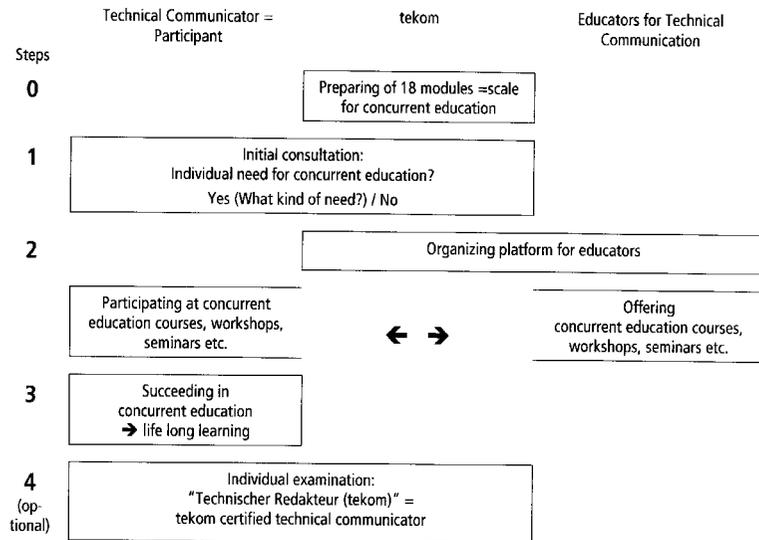
The survey undertaken by tekomp in 2002 showed: 87% of technical communicators in Germany have no specific education in technical communication. Therefore a strong demand for concurrent education (and optional certification) exists.

tekomp initiative for concurrent education

tekomp wants to offer a concept and a platform for concurrent education to these 87% not specifically educated technical communicators. The organisational approach is to offer individualised options with as few restrictions as possible. The educational approach is resource oriented (as opposed to deficit oriented), that means based on existing individual abilities.

tekomp prepared 18 modules for concurrent education as a scale to measure against and at the same time curriculum for concurrent education. It contains 6 core modules, which are obligatory, and 12 elective modules. tekomp prepared an organisational platform for educators and educational institutions which offer these modules. The concept has been communicated to tekomp members by publication in the tekomp journal and introduction at tekomp conferences. The start of module and concept development was 1999; it was launched in April 2003.

An overview of the tekomp concept for concurrent education is given in the following table:



Modules (= Qualifikationsbausteine)

Module No.	Module Name	min. hours
Core Modules (obligatory)		
1	Types of Technical Documentation	4
2	Information Research	8
3	Text Production	20
4	Terminology Management	12
5	Structuring and Standardising, SGML / XML, Single-Source-Management	48
6	Legal Aspects of Technical Documentation	16
Minimum amount of hours for core modules		108
Elective Modules		
7	Planning of Technical Documentation	20
8	Design / Layout	28
9	Communication Skills	16
10	Visualization	28
11	Online Help	48
12	Data Bases	16
13	Organisational Aspects of Technical Documentation	20
14	Quality Management	12
15	Soft- and Hardware	2
16	International Documentation	14
17	Copying of Technical Documentation	8
18	Technical Communicator – Profile of a Profession	2

Perspectives for European application

- 18 modules (Qualifikationsbausteine) could be translated
- Experiences with tekomp concept for concurrent education could be exchanged
- Concept for concurrent education and certification could be transferred

Informations may be obtained from

Internet: www.tekom.de

- Keywords:
 - Weiterbildung = concurrent education
 - Weiterbildungskonzept = concept for concurrent education
 - Qualifikationsbausteine = modules for concurrent education
 - tekomp Zertifikat = tekomp certificate
- 18 modules for concurrent education (Qualifikationsbausteine) for technical communicators available as PDF-files in German language
- Platform for educators: courses, workshops, seminars

E-Mail:

- Michael Fritz (tekomp Geschäftsführer = general secretary): m.fritz@tekomp.de
- Herbert Herzke (tekomp stellvertretender Vorsitzender = deputy chairman): hherzke@tecteam.de
- Rolf Schwermer (member of tekomp council for concurrent education): rolf.schwermer@ik.fh-hannover.de

Paths of Qualification in the UK

Alan Fisk, Institute for Scientific and Technical Communicators (ISTC)

Up to fairly recent years it has been the normal state that most technical communicators got into trade by accident, often as a second or even a third career and all too often without any proper training. This situation has started to change over the last several years, in particular with the contribution of former ISTC president Anke Harris.

There are several paths of qualification that you can take in the UK. Probably the oldest is called the City and Guilds certificate. City and Guilds is a very old organisation that supervises examinations and qualifications for all kinds of trades (more trades than professions actually due to historical reasons). There has been a City and Guilds certificate in technical communication for many years, at least since the 1940s. You can take it by correspondence courses or evening classes from certain colleges.

A few years ago the government introduced NVQs: National Vocational Qualifications. They run from one to six, six being the highest level of professional qualifications. You can qualify for them in many different ways. The ISTC made a major contribution to the creation of vocational standards for technical communicators, which finished up as a very impressively sized book going into great detail about what to know on the different levels of qualification.

More recently the City and Guilds introduced a qualification called the Litentiate ship. It is essentially done by presenting a portfolio of work which gets examined by a panel. You prove by your actual work that you have achieved high level professional standards. Quite a few members of ISTC have gone in for that and have received this qualification. This gives them letters LCGI after their name which stands for Litentiate of the City and Guilds Institute.

There have also formal academic courses been introduced. The Coventry University introduced a four year bachelor's degree in technical communication. There is also a popular and well-respected Master's degree offered by Sheffield Hallam University, most commonly taken part time.

There has also always been a large number of private firms that offered a variety from afternoon to quite extensive correspondence courses on various aspects of technical communication. Some of these firms are members of ISTC and contributed to ISTC's own development of training. ISTC, too, has often run one day courses and seminars of its own design.

What we are hoping to do in the future is to introduce our own qualifications. This is still at a very early stage but ISTC is working towards something along the lines of what tekomp has just introduced.

There is a slight cultural barrier: professional training and qualifications have traditionally been somewhat more respected in some European countries than in the UK. Also, in the next few years a lot of people who took up technical communication later in life will reach retirement age and will leave the profession almost in one group.

On the other hand more and more younger people take up technical communication as a first career, which is a good sign. The profession is getting better and better known, we have formal qualifications – so technical communication stands a good chance to become more and more recognised.

Existing curricula and study programmes on technical communication in France

José Martin Juarrero

French national educational standards & standardisation boards

The situation in France is much the same as in other countries: there are people trained to become technical writers but the majority does the job without being specifically trained for it.

Table 1. French national educational standards & standardisation boards

French standards			International standards
Ministère de l'Éducation Nationale Diplômes visés + homologués 1967		Ministère de l'emploi Homologations 1969	
Public institutions (universities, engineer schools)	Private institutions CCI Private	Public & private	Degrees Diplomas & NVQ
Doctorat	Bac + 8	← Niveau I →	PhD
DESS / DEA	Bac + 5		Master
Maîtrise	Bac + 4	← Niveau II →	
Licence	Bac + 3		
DEUG / DUT / BTS	Bac + 2	Niveau III	
Baccalauréat	Bac	← Niveau IV →	End of secondary education

An overview of degrees in France is given in table 1. For the most part in France diplomas are given by the ministry of education. This covers public institutions as universities and engineer schools or grands écoles, business schools, private institutes and chambers of commerce. To complicate the situation, the ministry

of labour, too, is able to accredit some diplomas, certificates and even seminars.

The degrees and levels of training programmes start at the end of secondary school. After two, three, four, five and eight years of education there are degrees from the ministry of education as given in the first column of table 1. The ministry of labour grants degrees on five levels, the highest being level 1, shown in the second column. The corresponding international degrees are shown in the third column.

With the european integration the ministry of education is working on reducing the levels to baccalauréat and degrees after 3, 5 and 8 years.

Existing academic and further training programmes on technical communication

There are 23 academic curricula and one further education seminar on technical communication (TC) in France. The 23 academic curricula are not exclusively for full-time students. You may also find employees taking part, for whom the ministry of labour is responsible, and who want to get a diploma, too. So full-time students may be mixed with people doing further education in every programme and seminar.

Of the 23 academic programmes 17 offer Masters, 2 Post Graduate Diplomas, 3 Bachelor of Arts and 1 undergraduate diploma.

The 23 curricula and training programmes may be divided in three categories: 6 programmes are completely oriented on TC skills, 3 programmes are partly oriented on TC skills and 15 include some TC skills.

Basic contents and skills

The six programmes completely oriented on TC skills have three fields of education in common:

Fundamental skills for TC

- writing
- chunking & organizing information

- editing
- information design
- usability & content management
- general & technical English

Information software for TC

- mark-up languages: html, xml ...
- web design
- Framemaker and other software
- practical applied skills in TC
- planning and implementing a documentary project

These six programmes grant masters or postgraduate diplomas. They last one year on average. They all include a four month stay in a company, during which students have to plan and realise a documentary project.

Trends & orientations

From the academic point of view the following points are important for the future:

- Development of Bachelor of Arts standards
- More applied research on TC
- Development of international partnerships
- Development of on-line courses within existing programmes

From the corporate point of view documentary project managers are still required (Master's standard), but there is a growing need for junior communicators (Bachelor of Arts standard).

Technical Communication: Education and Training in Sweden

Dr. Bo Norrman, Mälardalen Högskola

There are two types of programmes for technical communication in Sweden: academic programmes as full time or solitary courses, and vocational training, which is linked to industry.

Academic teaching

Several universities offer programmes or courses: Mälardalen, Karlstad, Linköping, Stockholm, Malmö, Kalmar, Chalmers, and Uppsala. There is no national standard as to what should be included in the curriculum. The programmes for the most part are offered by “younger” universities founded since the early seventies.

The programmes take 3 to 3.5 years as full programmes, leading to a BA. Requirements for a BA are 3 years studies with at least 1.5 years in a major subject, and the BA includes an individual final exam project. There are also some 2 year programmes for students already owning a degree for instance in engineering. The programmes are quite different in content and emphasis. Emphasis ranges from very technical (Kalmar) to more “information” oriented (Mälardalen).

In addition we have a lot of different courses. This may be solitary courses or a set of courses lasting up to one year. They are given as electives, which part of another programme to add skills to a different major subject. For instance many engineering schools offer this type of course. They are focused on “how to” (write a report, publish a scientific paper, documentation etc) and aim to give additional skills rather than really train Technical Communicators.

Vocational training

Vocational training programmes last two years. There is a national agency for these “Qualified Vocational Education” (as they are called) programmes. So they are state sponsored, but education is given by contractors. There are certain rules for these programmes, one of them being that they should be industry oriented. So there is a board for each of these programmes which is industry dominated. Another part of the concept is learning at work – therefore at least a third of the time has to be spent working at a company. These courses proved to be a very successful format for vocational training that has been applied in many areas.

Evolution of Information Design at Mälardalen University

The programme started out with the “root cause” being the needs of the regional industry. There was a demand for technical illustrators for instance from Volvo producing dumpsters and large trucks. They needed people who could “draw a blow-up picture of dumpsters”. Thus started a one year course for technical illustrators which soon expanded to two years.

As you need instructions to go with pictures, the first “add-on” was Technical Writing. Then a programme for spatial information was added, for instance for information in exhibits. The latest addition is business intelligence, focused on where and how to find information. The programme has now evolved into a three year BA course.

The programme at Mälardalen University consists of two tracks. One educational track contains the core subject “verbovisual communication”, which essentially translates to integration of text and illustrations. This part comprises half of the curriculum and is common for all students in the first one and a half year. The second track contains specific courses and electives on illustration, writing, software, web, etc. or information gathering and evaluation.

Educational methods in the programme are project oriented. Students work in groups on realistic projects which integrate the different tracks. This aims to reflect “real life” working situations

and allows collaboration with other departments, Biology and Chemistry for example.

Trends and questions

- Can the same academic requirements be used for different tracks?
- Is there too much working cross tracks and not enough specialisation, resulting in a loss of identity?
- Is the shift from basic technical / scientific knowledge to general information science a viable route?

Concerning concurrent education the question arises how to make academic education accessible to working individuals. This is on the one hand a question of course content, of required knowledge but also of timing. We designed our programme for full-time students but employees can take one or two courses per semester instead of four the full-time students have to absolve.

E-learning for Technical Communicators at Fachhochschule Hannover

Prof. Rolf Schwermer, Fachhochschule Hannover

To give a definition first, e-learning is a form of distance education working mainly with web based teaching materials plus a web based communication platform. Both elements constitute what we call in German "Telekurse" – e-learning units as used at Fachhochschule Hannover for the education in technical communication.

Activities

E-learning development started with the first "Telecourse" in 1997, the subject being typography for technical communicators. Back then it was not common to use the internet as platform for e-learning, but I had some good experience with taking part in an internet course from the Universities of Oldenburg and Michigan: a distance learning course for distance education teachers. This course was based on the internet with fifty participants from all over the world.

This gave the idea for our own e-learning courses and the use of internet. We started without any money but with some interested students to develop our own first internet-based telecourse on the subject of typography. After developing and conducting this first course with external participants from companies we applied for some funding which was granted. After this was spent we could find some private sponsors for a public private partnership. Later on we received again funding from the state.

Today we have six fully developed and evaluated telecourses on different subjects from the field of technical communication (Basics of technical communication, Structuring documentation with XML / SGML, Didactics for Technical Communicators, Knowledge Management, ...)

Since 2002 there has been no further funding; e-learning is integrated in "daily business". We are looking for future funding and cooperation.

- E-learning is not accepted by the students, if it is the only method of learning and not combined with traditional classroom sessions.
- The most successful way for students and teachers to make use of e-learning techniques is blended learning.

Perspectives

- Telecourse materials (lessons) could be translated and adapted to other educational environments or institutions.
- Experiences with e-learning courses, development of e-learning content concepts and development of didactical e-learning concepts could be shared with other educational institutions or persons.

Further Information

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A master programme in Technical Communication

Prof. Dr. Michaël Steehouder, Universiteit Twente

Technical Communication: A diffuse field

In very broad terms, technical communication refers to transferring knowledge from those who know to those who need to know (Barnum and Carliner, 1993). Technical communication is the process of creating, designing, and transmitting technical information so that people can understand it easily and safely, effectively, and efficiently. Most technical communication is written by people working in or for organisations. Technical communication is reached by people who need to carry out procedures and solve problems. (Carliner, 1999) Technical communication includes the communicative actions, means and systems that support people in performing tasks, in particular – but not exclusively – in technical environments or when technical products are concerned (www.stic.nl).

In narrower and more practical terms, we can talk about the production of various communication products: they may include manuals, technical specifications and marketing material in paper or electronic form. Technical writing includes in-house documents for use in the writer's company or agency, such as standards and procedures, and external documents such as computer documentation or proposals. (*Temmerman e.a. 2002*)

Higher education in Technical Communication in The Netherlands

There are no Technical Communication programmes *as such* in the Netherlands. Some courses and topics related to Technical Communication are part of other communication programmes.

There is a need for a Masters in Technical Communication from several points of view:

- *Communication students* would be given the opportunity to specialize in technical communications
- For *Professionals in the field* it would open the opportunity to

- broaden and deepen expertise in Technical Communication
- *Companies* need specialists of a high level
- The *discipline* would profit from the opportunity to educate students on a high level (especially in the fields of management and research)

The main components of a MA programme in TC

Across Europe and the U.S.A. you will find different programmes for Technical Communication on a Master's level. An overview of the main components from five programmes is given below.

Technische Redaktion (MA-level), RWTH Aachen

- Fundamentals of Linguistics
- Oral and written communication skills
- Psychology
- Sociology
- Media
- Information and Communication Technology
- Pedagogy
- Fundamentals of law

MA in Technical Communication, Sheffield Hallam University (distance learning)

- Document design / Information design
- Visualization
- Human computer interaction / Human factor
- Technical editing
- Research methodology

MSc in Technical Communication Management, Mercer University, Macon (USA)

- Foundations
 - Usability / History and Theory of Tech Comm
- Media
 - Multimedia / New Media
- Management in Technical Communication
 - Managing People & Projects / Knowledge Management
- Design
 - Information Design / Instructional Design
- Research

- Project Research / Independent Research

MSc Technical Information Design & Management, University of Michigan (USA)

- Communication theory
- Communication contexts (corporate, technological, and multinational)
- Communication practice
- Communication management
- The technical content which is being communicated

MSc Technical Communication, University of Washington, Seattle, USA

- Theoretical Dimensions of TC
- Empirical Traditions in TC
- Computer-Assisted Communication
- Information Design
- International Technical Communication
- Research Methods in TC
- Usability Testing
- Seminar-Current Issues in TC
- Electives
- Thesis or Project/Internship

The main components of our Master programme are:

- Theory
 - Communication theory, Psychology
- Research
 - Methodology, Statistics, Usability testing
- Management
 - Project management, Organization, Knowledge management

The programme consists of 30 ECTS on theory and design, 30 on research and is ending with a Master thesis.

Most of the courses are quite long, about 10 ECTS, because they include theory, research aspects and practical design combined in one course. There are courses on technical instruction, information management, interface and interaction design, and a shorter course on service marketing. There are electives, too, for example health communication or journalism. In their study students may focus on the things they are interested in, as none of

the courses is obligatory. The philosophy is that going in depth in three courses is more important than having them followed all.

Learning activities are workshops, design projects, collaborative research, 'Just in time support' ('helpdesk'), and every other year an international summer workshop.

The programme will start in August 2003 with the first courses. We hope for a constant growth to 20 – 40 students per year.

A challenge for a Master in TC: Handling diversity

Handling diversity on several levels is a challenge the programme will have to meet, as technical communication is a diffuse field of knowledge and technical communication has many different applications. Also, we expect students from very different backgrounds: with expertise in communication / technology / other disciplines; academic / professional bachelors, professionals in the field, and from different language and cultural backgrounds.

Current State of ECTS – European Credit Transfer System

Volker Gehmlich FH Osnabrueck, University of Applied Sciences

ECTS, the European Credit Transfer System has become much more than a transfer system. There are various workshops linked to ECTS on:

- ECTS as a Tool for Quality Assurance
- ECTS and Internationalisation – Cooperation with Partners outside Europe
- Credit Accumulation, Competences and the Definition of Learning Outcomes
- ECTS and the Diploma Supplement: Complementary Tools for Recognition and Transparency
- Credits for Lifelong Learning
- ECTS – a Student Perspective

ECTS is much more than an instrument of giving points. It is about a different perspective, the perspective of the learner.

Definition of "Credit System"

A credit mirrors the student's workload necessary to achieve the competences defined as learning outcomes of a learning area. It just reflects what the student has achieved (learning outcome), it does not state how the student performed (grades). The workload is defined by anticipating and later on evaluating the time required for studying a learning area in order to achieve the competences defined as learning outcome of a given programme. It comprises all the time a student has to spend to achieve the respective learning outcomes, i. e. contact hours (lectures), working in the library, in laboratories, at home, within a group ...

A Credit System is a systematic way of describing an educational programme by identifying the time needed to achieve a defined outcome and in terms of components to which credits are attached. This means a shift of paradigm

- from teacher to learner viewpoint
- from input to output orientation
- from a push to a pull system

A credit system has to respect the perspectives of different “customers”: students, employers, stakeholder, and society. It is not only for university learning but has to cover formal, non-formal and informal learning. A credit system therefore is the key requirement of life-long-learning concepts or programmes focused on learners, values, competences and employability.

ECTS in particular

There are several systems but ECTS only has been tested throughout all Member States of the EU and beyond. It was introduced 1989 as a pilot project and has since been used within European programmes such as Socrates, ERASMUS, Leonardo primarily for facilitating European mobility. It was used on a small scale, impacting upon a relatively small number of students.

The development towards a transfer and accumulation system was sped up by the Bologna process, because more and more students were encouraged to study abroad. Effectively that means mainstreaming ECTS as a generalised credit system for the emerging European higher education area. This will be of key importance for Europe’s higher education institutions and students.

Key features of ECTS defined by a group of counsellors:

- Student-centred system
- Based on the workload required to achieve learning outcomes
- “Convention” that 60 credits is the notional annual workload of a full-time student
- Credits are allocated to all aspects of study programmes
- Credits are based on completion and assessment
- Respect for the learning agreement between student and institutions

The Guidelines are:

- 40 weeks of full-time learning correspond to a notional 1.600 hours of student workload
- 1 credit equals 25–30 hours of workload
- 1 week of full-time learning equals 1,5 credits
- This has to be stated in the ECTS documents

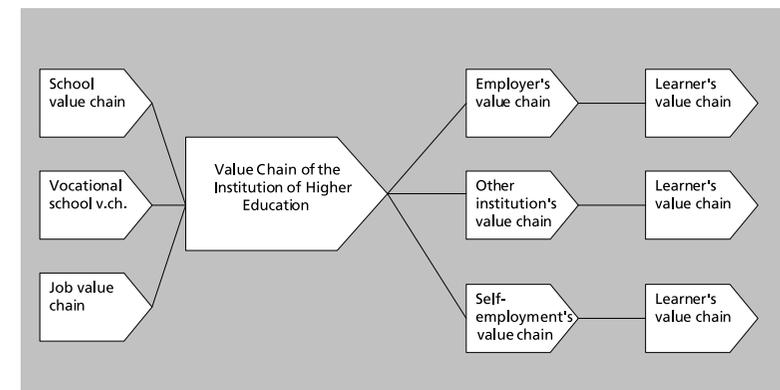
Further issues being discussed are:

- The role of ECTS in the development of joint degrees
- The introduction and use of ECTS at doctoral level
- Matching ECTS and national grading systems
- Linking credits and different levels of study
- ECTS and quality: as an instrument for promoting transparency ECTS facilitates the dialogue on quality in a comparative perspective

ECTS Value chain

“A value network is a value system where the inter-organisational relationships are more fluid. For example, a particular activity or component may be available from several “members” of the network on an entirely interchangeable basis. However, the members of network are tied together through their commitment to particular product and service standards, shared data...and not least, shared values trust ...” (Johnson/Scholes Exploring Corporate Strategy, 6th edition, 2002)

SOCRATES, LEONARDO, TEMPUS etc. JOINT ACTION in particular form value networks in linking together their individual value chains in the way of benefiting from each other most.



ECTS value chain network

ECTS facilitates

- the creation of common platforms (as in the car industry) with respective customizing of learning paths (individualised learning programmes on a modular basis to which credits have been allocated)
- a hub-and-spoke system (airlines) with “stressless” mobility of learners within the network on the basis of code-sharing (ECTS credits)
- a one-stop stop-shop (universal banking) in which all services are provided by the partners within the net on the basis of trust (ECTS credits in all forms of learning and at all levels of learning)
- the forming of strategic alliances and joint ventures (transnational education)
- outsourcing
- selection of best partners
- identification of best practice (benchmarking)
- change of roles of partners (suppliers, customers ...)
- sharing of activities and responsibility according to “who does best”
- creation of “win-win-situations”

Compatibility

The following is an attempt to identify criteria which credit systems should fulfill if being considered as compatible with ECTS. The first objective, however, is to introduce ECTS in all Bologna signatory states and beyond.

A new activity may be permitted as long as it does not interfere with the existing structures of a learning and teaching market and the effectiveness of existing operations on these markets.

Essential criteria are

- student mobility
- co-operation between institutions
- Europe as part of the curriculum and syllabus
- language of central importance
- training of teachers
- recognition of diplomas, qualifications, and study periods abroad

- higher education within an international context
- analysis and evaluation of activities and information
- dialogue with the higher education sector

The main objectives of ECTS are transparency, mobility and academic recognition. The instruments to achieve them are:

- information package
- allocation of credits
- learning agreement
- transcript of records
- diploma supplement
- grading

If a credit system is to be regarded as being compatible with ECTS it should not interfere with these objectives and instruments, in fact, it should reach an equivalent level of standard

- on the market of education and training, in the cooperation of institutions
- in the mobility of students within an institution or outside
- of academic achievements of a student in a way that also outsiders can comprehend
- being transparent.

Different names do not necessarily pose a problem. The EURO-PASS, for example, lists the acquired skills and competences – similar to a transcript of record, or the learning agreement i. e. corresponds to a training contract made before the training period begins.

A credit system can only be compatible with ECTS if it

- has a European dimension
- operates on education and training markets
- shows evidence that it contributes to the achievements of the objectives of ECTS
- uses the ECTS instruments and thus enhances process quality.

A system is not compatible with ECTS if any one of these criteria is not met. The decision whether a system is compatible with ECTS or not should be made by the EUA, taking into consideration the advice of the Commission and the ECTS counsellors. The decision should be documented and made public.

Vocational Education and Training – EU policies

Peter Baur, European Commission, DG Education and Culture

The European Union's strategic goal for 2010 is that Europe should become, by 2010 *"the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion"* (European Council, Lisbon March 2000). Education and Training is crucial for the implementation of this Lisbon strategy.

Education and Vocational Training – first actions

A first initiative was a report on the common objectives for education and training systems (March 2001) and the detailed work programme for its follow-up (February 2002). This was a major step forward in formulating strategic goals. The overall goal is to improve the quality of our European teaching and training systems to increase employability.

This was followed by the Communication of the Commission, "Create a European area of Life Long Learning", (November 2001), which set the paradigm of how to approach this process, aiming for a system that is coherent and comprehensive from school onwards. A particular problem is that structures (and even programmes at European Union level) at the moment are not necessarily adapted to this approach.

The Bruges-Copenhagen process, launched in Bruges by the Directorate General of Vocational Training in November 2001, is an initiative closely linked to vocational training. Then in Copenhagen there was a declaration from ministers not only of the Member States but also of the candidate countries in November 2002. The goal is to have an increased co-operation in Vocational Education and Training (Council Resolution and Copenhagen Declaration) – by for example getting ECTS or something similar in the area of vocational training – to make it easier to achieve flexibility in vocational training and permit transfer to universities.

Three other initiatives are: "Erasmus World", which is still a proposal, an extension of Erasmus to make it worldwide, on the one side to make it possible for European students and researchers to go abroad and on the other side to attract people from other countries.

Secondly there is the eLearning programme, which also has proposal status at the moment. Four main areas have been identified: the issue of digital literacy, as the use of ICT for learning is becoming more and more important in enabling people to use eLearning. The second issue is school twinning. The idea is to have pupils working together on projects and to help teachers work together via the internet. The third part concerns universities, called "virtual campus" aiming to bring the European universities closer together. The fourth area concerns the implementation of the eLearning action plan: in the EU there are a lot of existing projects and results, which are to be brought together by this programme in order to achieve synergies.

The "Communication on Investing in Education and Training" was recently published by the Commission mainly saying that there should be more intelligent investment in education and training, because there are figures showing that some Member States invest heavily without gaining any better results.

Report on the common objectives for education and training systems – follow-up

The reports states 13 objectives under three headlines. Eight working groups have been established reflecting the main objectives:

- A. Teacher and Trainer Education
- B. Basic Skills (it addresses traditional basic skills as well as i. e. learning to learn which gives it a rather wide scope)
- C. ICT in education and training
- D. Increasing participation in maths and science
- E. Making the best use of resources
- F. Mobility and European cooperation
- G. Open learning environment, active citizenship, equal opportunities and social cohesion
- H. Making learning attractive, strengthening links with working life and society

Bruges-Copenhagen process – follow-up

In the Copenhagen declaration a number of priorities are identified. An overview of the priorities and how they are implemented – partly linked to the follow-up of the Objectives report – is given in table 1.

Table 1.

Priority action in Copenhagen Declaration	Implementation
Strengthening European dimension	Copenhagen Coordination Group; Group F
Single Transparency Framework	Technical working group
Strengthening information, guidance and counselling	Group G – open learning environment – supported by Commission experts
Common credit transfer system for VET	Technical working group
Development of sectoral qualifications	New approach to be discussed
Validation of non-formal & informal learning	Group H – making learning attractive – supported by Commission experts
Quality assurance, common criteria and principles for quality in VET	Technical working group
Learning needs of teachers and trainers in VET	Group A – teacher and trainer education

Leonardo programme

The programme Leonardo da Vinci is the main instrument for implementation of European Vocational Education and Training. Leonardo's main priority in the last year was the Life Long Learning Communication. In this communication three main topics were identified where most value could be added on EU level:

- Valuing learning
- New forms of learning
- Guidance and Counselling

These three were included into the call for proposals for Leonardo projects. After the call was out, in November 2002 the Copenhagen declaration was signed, which is important and even more concrete with regard to vocational education and training. Therefore the Leonardo da Vinci call priorities for 2003/2004 have been linked to the Bruges-Copenhagen process. Those are:

- Transparency
- Information and guidance
- Credit Transfer
- Development of competencies and qualifications at sectoral level
- Validation of non-formal and informal learning
- Common quality criteria and principles
- Learning needs of teachers and trainers

These should on the one hand facilitate the submission of projects and on the other hand strengthen the political priorities. An overview of the respective corresponding priorities is given in table 2 (page 52).

Table 2.

Leonardo da Vinci Priorities	Corresponding Copenhagen Priorities
Priority 1: Valuing Learning • Identification, assessment and recognition of non-formal and informal learning	• Credit Transfer • Validation of non-formal and informal learning
Priority 1: Valuing Learning • Developing new sustainable approaches to valuing learning with specific emphasis on learning within enterprises and industrial sectors	• Credit Transfer • Development of competencies and qualifications at sectoral level • Validation of non-formal and informal learning
Priority 1: Valuing Learning • Developing certification so as to promote transparency of diplomas, qualifications and competencies	• Transparency • Credit Transfer
Priority 1: Valuing Learning • Definition of quality standards of diplomas and certificates developed by industry sectors and branches	• Development of competencies and qualifications at sectoral level • Common quality criteria and principles
Priority 2 – New forms of learning • Quality and relevance of learning materials	• Common quality criteria and principles
Priority 2 – New forms of learning • Development of a common framework of reference for the competencies and qualifications of teachers and trainers • Issues related with training of teachers, trainers and other learning facilitators	• Learning needs of teachers and trainers
Priority 2 – New forms of learning • Development of new approaches to develop basic skills in VET, including ICT supported learning	• Validation of non-formal and informal learning
Priority 3 – Guidance and counseling	• Information and guidance
Thematic Action 1: Quality	• Common quality criteria and principles

Additional information

Leonardo

<http://europa.eu.int/comm/education/leonardo>

eLearning

<http://www.elearningeuropa.info>

Points of discussion

Technical Communication and Translation

The situation regarding cooperation between Technical Communication and translation departments in educational institutions as well as regarding the educational background of Technical Writers varies a lot throughout the different European countries.

In the UK i.e. most of the technical communicators come from the technical area whereas in other countries technical communicators come from the language background. There are no programmes for technical communication involving translation, maybe partly due to the fact that there is not as much translation into English as out of English elsewhere.

In France the technical communicators' educational background is mainly what is called "science humaine" rather than technical. Technical communication programmes include English and technical English but do not aim to give qualification as translators.

In Sweden translation is not included in technical communication programmes. In general for Sweden as a small language community certain problems arise. For instance a board of technical terms addresses the problem of finding proper Swedish words for major technical terms. There is also a growing debate on the question of domain loss, as for instance in medical sciences everybody communicates and publishes in English.

In Poland mainly translators deal with technical communication. Therefore it would be helpful for translators to be able to attend one module or course in technical communication. Engineers on the other hand should learn about the language problem and cultural items in internationalisation.

In Finland most technical communication programmes are part of the language departments, either translation or philology and sometimes communication sections. One of the reasons is that the Finnish industry is driving the technical communication market. In industry time to market issue is crucial, therefore source texts have always been English and not Finnish.

An example from Germany: Fachhochschule Hildesheim runs a translator programme. It started 4 years ago and has since been including more and more technical documentation contents because of feedback from alumnis that many translators not only translate but have to write technical documentation, too. Two courses on technical documentation within 6 to 8 semesters are obligatory now. That is one example how university programmes change according to needs of the work market.

There are eleven university programmes for technical communication in Germany. These programmes tend to integrate more internationalisation issues, as it is important to have an understanding for the translation process and requirements of international markets.

Education outside universities

tekomp certificate is vocational diploma additional to other qualifications in the vocational field, i.e. for mechanical engineers working in technical documentation. tekomp aims to support people already working in the field without specific education but a lot of experience. The total sum of hours required depends on the individual profile. To obtain the certificate knowledge of 6 core modules and 2 others modules has to be proven. In the paper (see Schwermer, tekomp concept) only the minimum hours are given. The system was only just started, and will be revised after first experiences.

In Sweden there is no route outside university, no parallel system.

In France every company is obliged to use a certain amount of money on further education. Trend is here to ask for accredited courses in the vocational field, too.

In the UK there is a National Vocational Qualification Standard. It was created based on a research study undertaken in 1992/3. It proved important that industry was involved in the development. Based on requirements from industry ISTC produced modules and tried them, again with selected companies involved. A political problem was the lack of an awarding body because there are not enough consultants i.e. in city & guilds.

tekomp devised the modules together with people from tekomp, from academia, industry and technical documentation companies. The tekomp initiative does not aim for a national training system. Concerning the awarding body tekomp considered chambers of commerce but this proved too complicated, needing much political lobby work without any sure outcome. tekomp decided against that route because it would take too long. Maybe the certificate would be more valuable if given by chambers of commerce – but future value will be set by the market.

Speakers

Prof. Michaël Steehouder, Universiteit Twente

Holds the chair of Technical Communication and is head of the department of communication at the University of Twente in the Netherlands

Chair of STIC, the Dutch society for Technical Communication. He publishes books and articles about communication skills, the design of forms and technical instructions, and rhetorical aspects of technical communication.

Ursula Wirtz, tekomp Gesellschaft für technische Kommunikation e.V.

Master in romance languages and business. Project manager for tekomp since October 2000. Responsible for co-ordinating the TecDoc-Net project.

Thomas Diedrich, Universidad de Deusto

1991 Graduation as interpreter and translator in Salamanca and Madrid

Since 1989 self-employed translator and interpreter

1991–1992 responsible for building up a language service centre in the „I.M.H. – Instituto de Máquina Herramienta“ in Elgoibar, Spain: Specialised language courses and further training for engineers.

1992 Foundation of „I.L.S. – Industry Language Services“: Service provider for language services with specialisation in technical areas.

1999 Foundation of „Stella – die KommunikationsFabrik, S.L.“ in Zamudio, Spain

Teaching at universities, language services and services in technical documentation

Anke Harris, O.B.E., Mapline Engineering

Past President of the Institute of Scientific and Technical Communicators
Since 1983 Director of Mapline Engineering (engineering design and technical publications)
Business Woman's Enterprise Award in 1986, UK.
1993/4: Nominee for the prestigious Woman of Europe Award
1994/5: European Achievement Award
Founder member of the Dorset Training and Enterprise Council in 1989 and Vice Chairman from 1992 until 1998
"Officer of the British Empire" awarded for "Services to training and education".
Board member of the Industrial Development Board for the Government Office South West, (dti, Department for Trade and Industry)

Prof. Rolf Schwermer, Fachhochschule Hannover

Senior lecturer in the technical communication programme of Fachhochschule Hannover (university of applied sciences and arts), Germany (www.ik.fh-hannover.de/tr)
Graduated in linguistics (Germanistik), history and Turkish language
Foundation of own company providing services in technical documentation
Postgraduate in a one year study programme on technical communication
Several years teaching TC in further education institutes

Alan Fisk, Institute of Scientific and Technical Communicators

Alan Fisk has been a technical writer at six companies in Canada and England: Philips, CAE, BT, Nokia, Alcatel, and Counterpoint Systems. He has worked in telecommunications and software, and is particularly interested in usability and cross-cultural communication. Never having had any formal training himself, he recently had the useful experience of hosting a six-week placement for a student on the Technical Communication course at Robert Gordon University, Aberdeen.

Dr. Bo Norrman, Mälardalen Högskola

Graduated in Mathematics at Göteborg University
Postgraduate studies at the Medical School of Umeå University and in Biology, Marine Chemistry and Biology, French
1987 Doctor's thesis in Medical Science
Working experience as Post Doc / Junior Research Fellow / Deputy senior lecturer at the Department of Microbiology; participant on a joint European research cruise to the Weddell Sea; visiting scientist in the Marine Biological Laboratory, Mass., USA; Researcher at and manager of the Marine Environmental Division, Umeå Marine Sciences Centre; research manager, Biopool AB; responsible for product development
Currently senior lecturer at Mälardalen University, Department of Innovation and Product Development and Department of Biology and Chemical Engineering

José Martin Juarrero, Advancia de la Chambre de Commerce et d'Industrie de Paris

1987–1992 Head of department, responsible for vocational training in the Centre Trudaine of the Chamber of Commerce and Industry,
1993–1999 Head of department, responsible for vocational training programme CPSS in the Centre ECCIP/CPSS-Trudaine of the Chamber of Commerce and Industry
Since 2000 Head of Department for pedagogic innovation development and international liaisons. Responsible for various research projects.
Project manager responsible for various publications, among which the "*Guide du métier de Rédacteur Technique*" (Guide of the profession of technical communicator)

**Prof. Volker Gehmlich, Fachhochschule Osnabrück; ECTS
counsellor**

Since 1972 Professor of Business Management at the University of Applied Sciences in Osnabrück, Germany. Course Director of undergraduate and postgraduate double degree programmes
Involved in programmes of the European Union since 1978 in various functions, such as project co-ordinator, assessor, contributor to the design of new initiatives, member of a technical assistance unit, evaluator and trainer of assessors, counsellor and help-line to disseminate and develop ECTS
Appointed as expert by accreditation and evaluation authorities for the design of new international universities, faculties and study-programmes

**Peter Baur, European Commission, Directorate General
Education and Culture**

Graduated in mathematics and computer science)
Several years of working experience in the IT industry
Since 1994 working for the European Commission in the Directorate General responsible for the management and execution of European research programmes in the area of information and communication technologies
Since 2001 working for the Directorate General Education and Culture in the unit for Vocational Education and Training Policy, with particular responsibility for the use of new technologies to support teaching and learning in vocational education and training