

New Technologies and Learning in the European Community

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There is an enormous amount of activity going on in Europe with respect to the application of communication and information technologies (C&IT) to education and training. One major source of funding and stimulation for these activities is the Commission of the European Communities (CEC), whose 12 member states interact with each other in many different ways on projects involving C&IT in education. CEC Members: Belgium Denmark France Germany Greece Ireland Italy Luxembourg The Netherlands The United Kingdom Portugal Spain Major Activities at the Community Level A major motivation underlying community support of such projects is that of stimulating a European dimension in education and training, and bringing more flexible and equal access to educational opportunities throughout the European community. Communications and information technology are seen as key tools to support a transEurope approach to education and training, and thus the CEC sponsors many innovative projects in this area. In addition, the CEC is vigorously supporting development of a competitive European market for products and services involving new technologies in education and training; it uses the project approach as a strategy to build a critical mass of supply and demand throughout the European community. A key idea in CEC-supported projects is that of forming a consortium of partners from different member states, with an focus on partnerships involving business and education. Most projects emphasize cooperation among diverse groups, with different mother tongues and working in different types of institutions. Much is being learned about efficient and effective cross-cultural cooperation, mediated by communication and information technologies. At the same time, many projects are developing resources for use with these technologies.

DELTA Project

A major example of a CEC initiative is the DELTA Project. The focus of DELTA is more flexible and open learning through new technologies, particularly at the training and retraining level. The goal is that "learners can access learning whenever and wherever needed." The DELTA Project is perhaps the biggest project of its kind in the world -- a large-scale initiative supported by the CEC to provide direct and remote access throughout Europe to learning resources; to provide optimum support to learners, trainers, producers of learning materials and providers of learning services; and to develop a strong market for telecommunications-available educational resources in Europe. The current phase of the DELTA Project (there have been earlier ones) extends from 1991 through 1994. It has a budget of more than \$100 million from the CEC and about as much again from European industry, telecommunications providers and universities. Projects in the current phase of DELTA There are 174 organizations participating in this phase of DELTA from the 12 CEC countries plus Switzerland, Norway, Sweden and Finland. The organizations are universities, telecommunications companies, industry, and "small and medium enterprises," i.e., relatively small companies in the business of developing learning materials and delivering training. Many hundreds of people are involved, and the strong relationships being formed among universities and business are an important side-benefit of the project. The 27 projects in the current phase of DELTA (which together involve approximately 300 sub-projects) include:

The TRIBUNE Project, which is to create relevant information flows about issues related to DELTA specifically, and more broadly, about C&IT applications to education and training in Europe.

The OSCAR Project, to develop tools for use throughout Europe for the collaborative and distributed authoring of multimedia courseware.

The SMISLE Project, to develop multimedia simulation systems for use in education and training.

The ILDIC Project, to develop CD-ROM-based, interactive hypermedia and multimedia resources for education and training.

The JANUS Project, to bring together universities throughout Europe into new partnerships for telecommunications for distance and flexible learning, and which is intended to lead to an eventual "European Electronic Open University."

The MATHESIS Project, which is building a common, "stand-alone workbench" for learners and teachers throughout Europe. Through this they will have convenient access to telecommunication services, beginning with e-mail, plus access to distant multimedia learning resources.

The ECOLE Project, focusing on cooperative learning and group work at a distance, using telecommunications, with an emphasis on training.

The JITOL Project, focusing on the support of "just-in-time" (JIT) learning and computer conferencing among professionals in Europe through the combination of specially designed computer conferencing environments and access, through those same conferencing environments, to online sources of multimedia learning and reference material.

The SMILE Project, which is setting up study centers throughout Europe for employees of small- and medium-sized businesses to get high-quality re-training. Telecommunications is used to share resources and expertise, as well as to help learners find what is available and where, to meet their job-required needs.

The MTS Project, in which "multi-media teleschools" currently link more than 1,600 students throughout Europe and beyond, using both satellite and ISDN technologies. Training on topics such as "Cross-Cultural Communication for Managers," "English for Telecommunication Specialists" and environment-related topics is provided. Other Initiatives from DELTA The CEC is not only subsidizing research and development involving C&IT for education and training, but is also stimulating the use of C&IT as tools for those working in these research projects. An example of this is the Telematics-Based Training Multiconference, held October 26-27, 1993; its goal was to consolidate work relating to telecommunications and multimedia tools in order to "improve lifelong learning for the citizens of Europe." The conference involved meetings held simultaneously at sites in Athens, Bern, Berlin, Brussels, London, Madrid and Montpellier. Each site featured its own focus of discussion (including, for example, database systems and interactivity, interactive television, multimedia tutoring and computer conferencing), but participants also regularly shared experiences and resources with each other through ISDN interconnectivity.

For More Information There are many reports being written about the DELTA Project and all its activities. Major sources are the DELTA 1993 Annual Report;¹ the book *Flexible and Distance Learning*;² a set of case studies recently published by the TRIBUNE Project; and the biweekly "Tribune Fax & E-Mail Bulletin on New Technologies and Learning in Europe."³ Plans are well underway for the next phase of DELTA, 1995-1999. This next phase will be part of the "Fourth Framework Programme," which will also include broad-scale stimulation of research projects involving C&IT in schools and in teacher training. This new phase was announced at an October 1993 meeting in Poitiers, France, and includes the possibility of partnerships with key groups in the U.S. and Canada. Benefits of DELTA The major benefits of the DELTA Project have been to provide coordinated funding and support for university researchers involved with C&IT in education. Other beneficiaries are those companies developing learning resources and services that can be accessed via telecommunications, as well as the telecommunications companies themselves. DELTA encourages these companies to move toward a coordinated infrastructure and cooperative approach in providing integrated telecommunications services capable of bringing multimedia learning resources to schools, communities, workplaces, training centers and even homes throughout Europe. The opportunity of faculty researchers to be funded for participating in these sorts of initiatives has brought a high level of interest to telecommunications in education. The strong involvement of industrial partners is a particular benefit of DELTA, bringing educators and educational researchers into partnerships with business and training on a scale and within a coordinated framework probably not occurring anywhere else in the world. Other Activities: A Sampling In one short paper, it is not possible to summarize the wealth of activity going on in Europe with C&IT in education. Many activities, for instance, are being sponsored by the CEC's Task Force on Human Resources, Education, Training and Youth. One example is the international study, developed for a meeting in Denmark in June 1993, on the uses of databases and telecommunications at the school level in Europe.⁴ The task force is also a key player in stimulating development of a "TransEuropean Network for Education and Training."⁵ Table 1 is an overview of key projects and events sponsored by the CEC that have led to the current stage of development of this TransEuropean Network. International Conferences The Denmark conference was only one of literally hundreds per year that are held in the European community. In the week in which this report was written,

for example (end of October -- beginning of November, 1993), an interested practitioner could choose among: an international Colloquium for EDI and Multimedia in Toulouse, France; a conference sponsored by COMETT (another large project for information technologies in education and training, like DELTA, sponsored by the CEC) on Integrating Multimedia into Training, in Nanterre, France; The Seventh Plenary Meeting of the European ISDN Users' Forum, held in London; the Telematics-Based Training Conference (described earlier), held in seven sites throughout Europe, interconnected by ISDN; ETTE '93 (for European training technologies) held in Amsterdam; a Conference on the Use of CMC to Support Group Work in Higher Education, at Lancaster University in the U.K.; and LearnTec '93 European Conference and Trade Fair for Educational Technology and Continuing Education, held in Karlsruhe, Germany. The "Tribune Bulletin, mentioned earlier, contains an on-going overview of meetings and contact persons related to the meetings." As another example of European activity, the European MultiMedia Awards (EMMA) recently announced its 1993 winners for "stars of the European educational multimedia industry." The 1993 winners included Liverpool John Moores University, for its development of multimedia materials -- more than 3,000 images, drawings, photographs and video sequences -- for the study of cervical cytology. Another winner was the Science Series: Disk 1, The Elements, CD-ROM, which is based on the new U.K. science curriculum for 11- to 18-year olds. Developed by Interactive Learning Productions in partnership with Yorkshire Television, the CD combines text, animation and sound with literally hundreds of video clips and pictures of chemical experiments. Thus, Europe has much to offer in the way of experiences, insights and partnerships with respect to the use of communication and information technology in education and training. Only a glimpse of the activity has been given here.

Betty Collis moved from the University of Victoria in Canada to the University of Twente in The Netherlands in July 1988, where she is a member of the faculty of Science and Technology. Internationally active since the late 1970s with computer-related technologies in education and training, Collis now specializes in learning and working cooperatively at a distance. E-mail: collis@edte.utwente.nl Pieter de Vries is a specialist in online information sources and on the application of telecommunications to secondary and vocational education. He works regularly on projects with PTT Telecom Netherlands. E-mail: jfrppv@rulmvs.leidenuniv.nl. Together, Collis and de Vries recently finished a year-long study for the CEC on educational decision-makers' reactions to the emerging TransEuropean Network for Education and Training, and study for the Dutch PTT and Ministry of Education resulting in recommendations for an educational online service in The Netherlands.

References: 1. CEC, DELTA 1993: Annual Technical Report on Research and Technological Development for Flexible and Distance Learning, Brussels, Belgium: Commission of the European Communities, 1993. To order: CEC, DELTA Project, DGXIII Unit C-3 - Telematics Networks and Services Applied to Flexible and Distance Learning, 200 Rue de la Loi, BU29 04/05, 1049 Brussels, Belgium; Internet: Irod@dg13.cec.be 2. Van den Brande, L., Flexible and Distance Learning: A Special Report, Chichester, UK: John Wiley (1993). To order: John Wiley, Baffins Lane, Chichester, West Sussex, PO19 1UD, UK. 3. TRIBUNE Consortium, "Open to Learn: European Case Studies," Volume 2 of the TRIBUNE Collection (1993) and the Tribune Fax & E-Mail Bulletin, Amsterdam: SATURN (bi-weekly). To order: Mrs. C. Navas, TRIBUNE Coordinator, SATURN, Keizersgraacht 756, 1017 EZ Amsterdam, The Netherlands; Internet: Clara.Navas@sp1.Y-NET.fr (for the case studies) or fimpsym.uni-erlangen.de (for the Bulletin). 4. CEC, Conference on the Use of Databases and Telecommunications in Education, Final Report, Copenhagen: Ministry of Education, 1993. To order: Mrs. R. Smedegaard, Ministry of Education, Frediksholms Kanal 26, DK-1220 Copenhagen K., Denmark; Internet: RitaSmedegaard@uvm.min.dk 5. Collis, B. and de Vries, P., The Emerging Trans-European Network for Education and Training: Guidelines for Decision Makers, study prepared for Task Force Human Resources, Education, Training and Youth, Commission of European Communities, Brussels, Belgium, 1993. Contact the authors for information on obtaining a copy of the Final Report. 6. European MultiMedia Awards (EMMA); contact A. Jones in the U.K., fax: 44-61-4299568.