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COMMUNICATION FROM THE COMMISSION

TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

LEARNING IN THE INFORMATION SOCIETY

Action plan for a European education initiative

(1996-98)

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INTRODUCTION

Against a background of trade globalisation, technological innovation and economic upheaval, every society is confronted with profound changes. Europeans must be prepared to cope with this situation and their education systems must help them to do so.

With the emergence of the information society, everyone must upgrade their skills constantly and obtain new qualifications[1].

Tomorrow, jobs are at stake, therefore it is why it is important for the tools of the information society to be deployed in new learning methods. These priorities were restated by the Commission in the White Paper on *Teaching and learning: towards the knowledge-based society* and the *European confidence pact for employment* presented to the European Council in Florence in June 1996.

Political leaders at both Community[2] and national level now realise how much of an educational and cultural challenge the information society presents. Within the Commission the Research-Industry Task Force on "Educational Software and Multimedia" has set about analysing educational multimedia and their market and uses.

Its work has given rise to a set of recommendations aimed at reinforcing research activities in this field and facilitating the distribution of educational multimedia whilst taking into account the needs of users, by mobilising and coordinating the use of the numerous instruments at its disposal[3].

The European Education Ministers meeting in the Council on 6 May 1996 gave a clear political signal to the Commission and the Member States by adopting a Resolution encouraging the use of educational technology in partnership with the private sector.

In Europe and throughout the world many countries, such as the United Kingdom, Germany, France, Italy, the Nordic countries and also the United Sates and Japan, have recently launched initiatives to connect schools to communication networks, train teachers and develop software to meet pedagogical needs (c.f. Appendix). The private sector is also gearing up to equip and network[4] schools in partnership with the authorities.

Considerable technological advances have been made with regard to their user-friendliness, the pedagogical requirements are clearer and are better understood. Many

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[1] See document produced by the Round Table of Industrialists on "Education for Europeans : Towards the Learning Society"

[2] See the following documents: White Paper "Growth, competitiveness and employment" (1993); "Towards the information society in Europe: an action plan" COM(94) 347; Green Paper on innovation (1996); Green Paper "People first: living and working in the information society" (1996).

[3] Final report of July 1996 SEC(96)1426/final. On this basis, the Commission will launch a call for joint proposals on 15 December 1996 for all programmes involving educational multimedia.

[4] Such as Deutsche Telekom and Bertelsmann as part of the German initiative, the association of cable operators in the UK and Apple, which is setting up pilot classes in five European countries.

teachers are ready to experiment with the new educational tools. The stage is set for widespread use of technology in education and training and we now need to create an environment conducive to its being disseminated through a range of concrete actions at European level to support national and local initiatives.

It is with this in mind that the European Council in Florence supported this initiative and asked the Commission to draw up a **plan of action** as soon as possible.

I THE RATIONALE BEHIND A EUROPEAN INITIATIVE

A variety of research and pilot experiments have shown the value of information society technologies and multimedia for teaching. As long as they are geared to people's needs, these tools help them to acquire new knowledge and help to develop new, flexible customised and interactive learning methods. They increase the range of education and training facilities and offer more widespread access to them.

They can also encourage personal and pedagogical exchanges and, indeed by encouraging intercultural and multilingual communication between 72 million pupils and students and 4.5 million teachers throughout Europe, information society technologies and multimedia are likely to enhance the European dimension in education and European integration through teaching and learning exchanges.

However, there are still many obstacles to the widespread use of these tools. Educational establishments do not have enough equipment of sufficient quality. Multimedia "content" available on the market often fails to cater for the pedagogical needs. The establishments' capacity for funding equipment is restricted by severe budgetary constraints. Finally, the new tools cannot be integrated into teaching practices until the teachers have been trained and teaching methods and systems have been adjusted, which is often a delicate exercise.

It is the duty of education and training establishments to help young people to find a place in the information society by avoiding a situation where only the children of the most privileged families and schools will reap the benefits of educational multimedia. Education and training establishments and, in the longer term, employment and social cohesion in Europe will pay a high price for increasingly inequitable access to these new practices.

The European multimedia industry could be severely affected if the number of users and producers is too small. After all, this is a sector which has considerable potential in terms of the development of new products and services, rapid growth, and employment creation. Europe counts among its many assets, its cultural heritage, major intellectual and financial resources and considerable technical expertise which should be exploited by multimedia companies in the European market.

If this opportunity is missed, our increased dependence on pedagogical and cultural content originating from its main competitors outside Europe would be particularly damaging for the cultural identity and linguistic diversity of the Community.

The European initiative will reinforce the concerted efforts that have already begun in several regions and countries of the Community, thus following the guidelines laid down by the Council Resolution on educational multimedia software.

It aims to strengthen the impetus of the often fragmented activities at national level by coordinating them and by focusing on those actions which present the greatest benefits for the Community as a whole and, in full respect of the principle of subsidiarity, take into account the different levels of development between the regions. The initiative will help to mobilise a large enough number of users more rapidly, reinforce the European dimension of pedagogical exchanges and create a genuine European educational multimedia market.

In this field, a well-targeted approach to Community actions is vital to achieve maximum effect given the limited financial resources. The current Action Plan focuses on **primary and secondary schools** (including vocational schools), the weak links in the educational chain in terms of the use of these practices since they are far less widespread than in higher education or vocational training.

Nonetheless, it is important to underline the need to give a life-long perspective to education, from the school to vocational training. The use of new technologies in vocational training, however, involves other actors and other responsibilities. This issue will be dealt with in a further Communication which will soon be presented by the Commission in the light of comments received in the course of the debate launched by the publication of the Green Paper *"Living and Working in the Information Society: People First"*.

II.PLAN OF ACTION FOR THE EUROPEAN INITIATIVE

The initiative has 3 main objectives:

➔ *To accelerate schools' entry into the information society by giving them new means of access to the world.*

➔ *To encourage widespread application of multimedia pedagogical practices and the forming of a critical mass of users, products and educational multimedia services*

➔ *To reinforce the European dimension of education and training with the tools of the information society whilst enhancing cultural and linguistic diversity*

In order to achieve these general aims the initiative will pursue four additional action lines to support local and national initiatives[5].

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[5] The initiative will come under the European Commission's responsibilities laid down by the Treaty on European Union in the fields of education and training, regional cohesion, industry, technological research and development and trans-European communications networks.

The Initiative could be supported by a small **group of high level figures**, chosen on the basis of their vision and conviction, whose role, as the "champions" of the Initiative, would be to give it extra momentum.

II.1 *Action line N°1*:
Encourage the interconnection of school networks at a Community level

(i) Context

Experimental electronic schools networks have been set up at regional or local level but are fragmented in their distribution here and there experimentally. These enable electronic mail to be transmitted, cooperation (on producing thematic databases, practical comparative work and joint products incorporating text and images) to be learned and *fora* to be organised for both pupils and teachers to exchange information, advice and practices.

The experiments under way clearly show the educational potential which can be expected: users' access to the outside world, more freedom to search for information, writing is more rewarding (by writing for somebody), there is a sense of collective effort in work on subjects of common interest, such as the environment, society, art and current affairs, and users become familiar with cultural and linguistic differences, be they regional (such as the differences between rural and urban life) or national (linguistic exchanges and questions and answers on social and political life, etc.).

The interconnection of regional and national school networks could make a significant contribution to the teaching of subjects such as languages, science, history, or art, which would most benefit from a European approach. As they develop, these networks should allow schools to use electronic information produced by museums and other cultural and educational institutions.

The number of schools in existing networks is still small - less than 5% of European schools had access to an electronic schools network or to the Internet in mid-1996[6]. Moreover, there is still very little European-wide communication, partly because there are technical or language problems but mainly because they do not know enough about the experiments conducted in other Member States.

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[6] The situation varies greatly from one country to another: two-thirds of schools are connected to networks in Finland and in Sweden but only 15% in the United Kingdom and less than 2% in France or Germany.

The current wave of connecting schools to the Internet, which has come about spontaneously or has been encouraged by the authorities, could soon subside rapidly due to technical problems caused by short-term saturation of the Internet network or because of a lack of awareness on the part of educationalists of the pedagogical benefit of the new techniques.

Furthermore, the Commission supports the extension of "public access" to the Information Society. This includes especially the connection of schools, universities and libraries. Preparatory work is already underway, both at Community and national levels, with the aim of promoting access to communications and information services in the field of education[7].

The interconnection of schools networks will enable innovatory teaching practices to be exchanged between European classes. This process will enable cultural and linguistic diversity to be expressed and will integrate pilot projects aimed at creating a pedagogical environment which is conducive to innovation, be it local, European or international[8].

Difficulties arising from communication in different languages should neither be ignored nor overestimated: indeed, schools benefit from a privileged environment for the learning of languages, and multimedia provides a versatile means of communication using sound and image which can greatly facilitate mutual understanding.

This approach will go hand-in-hand with the development of local schools networks and will be a gradual process, the aim being to connect all schools in Europe, including those in the most disadvantaged areas.

(ii) Implementation

Projects aimed at interconnecting schools networks will be launched in the aftermath of the "European Year of Lifelong Learning". The initiative will be based on the networks which are already well-established at local and regional level and establish contact between them. This "network of networks" will progressively be extended to all school networks, either existing or in the pipeline, and to geographically isolated or socially disadvantaged schools, thus supporting the "twinning" activities between towns and regions of Europe.

The initiative will be underpinned by the policies conducted by local, regional and national authorities, which have the final say in equipping schools and which can apply for aid from the Structural Funds in the eligible regions. The initiative will also build on experimental projects under Community technological research and development, education and training programmes.

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[7] "Universal service for telecommunications in perspective of a fully liberalised environment" COM(96) 73 final. cf also the initiative of the British telecommunications office Oftel to create a Task Force on Education in the process of consultation on the universal service.

[8] Examples of these are the projects resulting from Community programmes or the "Cross-cultural education and training" project launched at the G7 Summit in Brussels on the information society.

The "network of schools networks" will be open to experiments conducted in Third countries, in particular the countries of Central and Eastern Europe.

Several types of activities are necessary:

- The Commission will also promote **experimental educational environments** involving a limited number of establishments to explore further research on the interaction between technology and teaching, mainly for developing cooperative working tools in networks.

- The Commission will encourage the creation and interconnection of <u>multimedia discovery classes</u>, like those which have already been set up and networked in some countries[9], and enable teachers and pupils to devise teaching projects using multimedia and to familiarise themselves with the use of new technology at specially equipped sites. These sites could also offer remote counselling services for teachers.

- A **conference** will be organised before the end of 1996 to take stock of developments in national schools networks, as well as the needs, practices and difficulties encountered (technological, legal, financial, etc.). The conference will be attended by people involved in local, regional and national initiatives (teachers, computer companies, network operators, on-line service providers head teachers and associations).

  One workshop will examine questions linked to the copyrights of multimedia products to promote their pedagogical utilisation as well as security questions regarding the use of the Internet by school networks (e.g. violent, racial or pornographic contents, paedophilia).

- <u>Technical scenarios</u> for the interconnection of schools networks at Community level (the infrastructures used could be the automatic telephone network, integrated service digital network or broadband research networks providing access to Internet), the <u>costs</u> involved and suitable <u>financing</u> mechanisms will be identified in a **feasibility study**, on the basis of the results of the conference.

  The management of the project to interconnect regional and national schools networks at Community level could be entrusted to a consortia, bringing together Education Ministries as well as local and regional authorities and companies concerned[10].

  Furthermore, the Commission will examine experiments in progress in the countries of the Community and its main partners to extend the field of application for the universal telecommunications service for linking education and training establishments. The results will be used to formulate proposals in a report which the

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[9] An example of this in France is the "Mmultimedia interactive teaching" project of the *Ligue Française de l'Enseignement et de l'Education Permanente*.

[10] The regions are particularly involved in information society activities. For example, six regions committed themselves in 1994 to develop telematics applications (The IRIS initiative)

Commission will present before the end of 1997 on the level, quality and extent of the universal telecommunications service.

II.2 Action line N°2:
Stimulate the development and dissemination of content of European interest which can be used for educational purposes

(i) Context

Existing schools' networks can enhance educational exchanges within groups of pupils, between pupils and teachers and between teachers. They also enable teaching resources for conducting these exchanges to be transferred. It is therefore important to encourage the development and dissemination of "contents" which lend themselves to these.

Each medium still has its own creation, production and distribution methods. However, with the development of digital technologies, audiovisual or paper products can easily be transferred to electronic media (CD-Rom, CD-I or on-line service). All the same, the content and narrative structure of the products often has to be considerably re-organised for multimedia production. It is vital for audiovisual, multimedia production and education professionals to cooperate to take full advantage of these capacities.

Opportunities for developing content will multiply with the arrival of large numbers of digital television channels. Educational and cultural broadcasts ought to be highly successful, given the public's expectations and demands. As the use of television is widespread, audiovisual products could constitute the ideal vehicle for educational multimedia in schools and homes.

Such audiovisual products could be either educational broadcasts designed to meet specific training aims, or high-level information or quality broadcasts for the general public which teachers feel can be incorporated in their teaching syllabus.

Many broadcasters have already integrated "continuity of use" in their strategy by adopting a multi-product approach, like educational television in Sweden or the BBC, which regularly distributes video cassettes made from its broadcasts. This approach is now being extended to take advantage of digital technology. The BBC is producing CD-ROMs on Shakespearean theatre from its audiovisual productions. In France, Channel 5 is digitalizing many of the programmes which it broadcasts in order to build up a repertoire. This will be available for consultation by institutional users depending on their specific needs. The technical issues have virtually all been settled now but legal problems remain.

Several broadcasters favour the inclusion of a European dimension in their commercial strategy. Indeed, fourteen public members of the European Broadcasting Union have decided to promote the exchange of European cultural programmes by sharing

programming through common broadcasting pool. Plans by a number of European broadcasters for a European education channel are also on the drawing board[11].

(ii) Implementation

The following actions are envisaged:

- There are many ways of both producing and disseminating audiovisual and multimedia contents. In order to examine these, a **working group** made up of high-level representatives of producers and distributors of educational programmes and multimedia productions will be formed by the end of 1996.

  Its mission will be to explore opportunities for cooperation in the <u>production</u> of general educational content (learning of languages, science, culture and European civilisation, arts, music, etc.) which caters for the needs of European education and training. It will have to lay down the general principles governing the quality and exchange of educational products and examine the technical and legal conditions for their use by schools or other educational and cultural institutions in order to promote the <u>dissemination</u> of such content.

- The Commission will provide support for an inventory of **European multimedia products** which can be used for teaching through various media (educational broadcasts, CD-ROM, CD-I and on-line services). Results of this survey will be widely distributed.

- Finally, the Commission through its support for concrete projects will promote the development and **electronic networking of multimedia resource centres** (such as multimedia libraries, teacher training centres and on-line "digital libraries") with which users can gain access to a wide range of European multimedia and audiovisual products and services.

II.3 *Action line N°3:*
Promote training and support for teachers and trainers in the use of new technology in their teaching methods

(i) Context

Teaching methods are always evolving. What are known as "active" teaching methods are already widely used in language teaching, which has long used audiovisual media. Many teachers are open to innovation but do not always get sufficient encouragement or institutional support to experiment and validate new teaching methods. This is compounded by confusion as to how the new tools are to be used. Simply to get them to work, newcomers often have to invest more time than the majority of teachers are able to do on their own.

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[11] Many educational audiovisual experiments are being carried out in other countries. In Israel, time slots for educational purposes are allocated on all channels, including commercial channels, rather than an educational channel proper being created. In Canada, public television channels are obliged to broadcast at least one programme a week for reuse for teaching purposes.

Where the technologies have been introduced successfully they have been used to support new teaching methods which largely leave the initiative in the hands of pupils and teams. The teachers' role is thus slightly different. They have to learn to supervise and organise groups of pupils whilst monitoring and assessing individual progress.

One of the key factors in successful integration and dissemination of multimedia in teaching methods is to prepare the teaching staff properly and to ensure that technical support is available when new tools are being used. Such training is one of the priorities in the Member States' initiatives (such as in "*Multimedia in teacher training*" in the Netherlands and the work carried out by the *National Council for Educational Technology* in the United Kingdom. Many experimental projects have already been launched and the results and methods used should now be promoted at a Community level.

(ii) Implementation

Practical, on-the-job experimentation appears to be the most promising way of training teachers. Training activities have to accompany the development of schools networks and, in the long term, must be aimed at a large number of teachers, and trainers, and thus take advantage of the similarity between different methods.

Training covers the use of tools (equipment, services and software), searching for and structuring information from the networks, and design and distribution of multimedia teaching materials. It is underpinned by educational and technical support services to help teachers use multimedia in the classroom once they have been trained. It concerns the following:

* To step up **training activities under the Community programmes**. The Commission will encourage exchanges of teachers between European schools in order to enable them to compare notes and, for less experienced teachers, to familiarise themselves with using multimedia in a classroom situation. In order to involve as many teachers as possible, the project will also encourage the development of distance learning courses to enable teachers to gain such experience without having to travel to the course.

* To ensure that the results of discussion and experiments conducted at national level can be of benefit to the whole teaching profession. A **network of training centres for teachers and trainers** will build on local and national initiatives and current Community projects[12] to enable good practice to be disseminated at European level.

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[12] Such as the "Trends" (Telematic applications programme), "Fetiche" (Socrates programme) and "Web for Schools" (information technologies programme) projects.

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