European Communities

EUROPEAN PARLIAMENT

WORKING DOCUMENTS

English Edition 1985-86

30 September 1985 SERIES A DOCUMENT A 2-98/85

REPORT

drawn up on behalf of the Committee on Youth, Culture, Education, Information and Sport

on New Information Technologies and the School Systems in the European Community: Work Programme for the period 1985 - 1987
(COM(84) 722 final)

Rapporteur: Mr H. McMAHON

PE 96.943/fin.
Or.De.

By letter of 14 March 1985, the Committee on Youth, Culture, Education, Information and Sport requested authorization to submit a report on new information technologies and the school systems in the European Community: work programme for the period 1985-87 (COM(84) 722 final).

On 6 May 1985, the Committee was authorized to draw up a report on this subject.

At its meeting of 27 March 1985, the Committee appointed Mr Hugh McMAHON rapporteur.

The Committee examined the draft report at its meetings of 24/26 April 1985; 22/23 May 1985; and 19 September 1985. At the latter meeting it adopted the motion for a resolution unanimously with one abstention.

The following took part in the vote: Mrs EWING, chairman; Mr SELVA and Mr PAPAPIETRO, vice-chairmen; Mr McMAHON, rapporteur; Mr BØGH, Miss BROOKES, Mrs DE BACKER-VAN OCKEN (deputizing for Mr HERSANT), Mr ELLIOT, Mr HAHN, Mr HOWELL, Mr NORMANTON (deputizing for Mr McMILLAN-SCOTT), Mrs PEUS and Mr TRIPODI.

This report was tabled on 24 September 1985.

The deadline for tabling amendments to the report will be published in the draft agenda of the session at which it is to be examined.

CONTENTS

The Committee on Youth, Culture, Education, Information and Sport hereby submits to the European Parliament the following motion for a resolution (together with an explanatory statement):

A.

MOTION FOR A RESOLUTION

on a work programme for the period 1985 - 1987 in relation to new information technologies and the school systems in the European Community

The European Parliament

- having regard to the preamble of the Treaty of Paris establishing the ECSC which recognises that "Europe can built only through practical achievements which will first of all create real solidarity, and through the establishment of common bases for economic development";
- having regard to Article 118 of the Treaty of Rome;
- having regard to Parliament's previous resolutions, in particular those of 11 March 1982[1] and 17 May 1983[2] regarding education and new information technologies;
- having regard to the Council resolution of 19 September 1983[3] which noted the social significance of early familiarisation for young people with the new information technologies;
- having regard to the Communication from the Commission of the European Communities to the Council on New Information Technologies and the School Systems in the European Community: Work Programme for the period 1985 - 1987[4];
- having regard to the report of the Committee on Youth, Culture, Education, Information and Sport (Doc. A 2-98/85);

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[1] OJ C 87/92 of 5.4.82

[2] OJ C 161/32 of 20.6.82

[3] OJ C 256/1 of 24.9.83

[4] COM (84) 722 final

- whereas according to OECD estimates in 1990 approximately two-thirds of all employees will need to be familiar with the new information technologies,

- whereas Europeans must become familiar with the new information technologies if Europe is to remain competitive world-wide and particularly in relation to the USA and Japan,

- whereas considerable efforts are already being made in the Member States to give pupils in all educational establishments a basic knowledge of the new information technologies from the beginning of secondary level,

- whereas far too few teachers are adequately trained to teach the information technologies,

- whereas it is not yet clear how education in the information technologies can best be integrated into the syllabus,

- whereas education in information technology should not only give pupils a technical mastery of the subject but also make them aware of the social consequences of the new information technologies,

A. whereas education in the new information technologies is not coordinated throughout the Member States, but is subject to the budgetary restraints imposed by particular governments and/or economic development,

B. whereas disparity in access to education in the new information technologies will confirm and increase disparities between the Member States,

C. having regard to the unprecedented pace of technological change, and the harmful effects of concentration of knowledge within those areas best equipped to keep up;

D. having regard to the need to ensure that young people in particular are introduced to new information technologies in such a way that the acquisition of knowledge in the technical sphere is not at the expense of limitations on knowledge of the humanities and creativity,

E. having regard to the need to consider before the large scale introduction of new information technology in schools the extent to which curricula can be approximated to avoid an additional burden in terms of time on young people,

F. having regard to the need to eliminate the present discrimination against girls in the acquisition of technical skills and abilities,

G. having regard to the need to strengthen critical awareness along with mastery of technical skills and at the same time people must be trained to examine carefully the relationship between mankind and technology;

1. Commends the work programme in the field of new information technologies and school systems proposed for 1985 - 87;

2. Calls upon the Council and especially the Member States to ensure that education services receive supplementary funding and financial backing to enable them to participate fully in the work programme;

3. Calls upon the Commission to ascertain that decisions on grants from the Social and Regional Funds for 1985 to 1987 to local authorities within the Member States are generous enough to allow for participation in the above scheme;

4. Urges the Budgetary Authority to consider sympathetically in the budgets of the European Communities for 1986 and 1987 the need to provide sufficient funding for the work programme;

5. Calls on the Commission to set up a study group to:

   - monitor the introduction of the new information technologies at all levels of education in the Member States,
   - explore through pilot projects how the new information technologies can be best used in the school systems in the Community,
   - ensure that exchanges of experience take place between the Member States in this field,
   - examine how any harmful effects of excessive reliance on new information technology might be avoided,
   - study any negative effects
     . on mastery of traditional cultural technologies
     . on the development of creativity
     . on communication patterns in the family and places of education,

6. Calls upon the Commission to report to the Parliament, the Council and the Member States on the results of such monitoring;

7. Notes with concern that Spain and Portugal are considerably lacking in new information technologies in their education systems and calls on the Council to take all necessary steps to ensure that after enlargement, funds are allocated in such a way as to remove existing disparities;

8. Calls on the Member States to take into account adequately the importance of the new information technologies in their educational systems, especially as regards the allocation of financial resources, the training of teachers and the necessary collaboration between schools, industry and European teachers' associations;

9. Instructs the President to forward this resolution to the Council of Ministers, the Commission, and the Education Ministers in the Member States.

B - EXPLANATORY STATEMENT

Introduction

In our modern high-tech era, it is important that Community youngsters be familiar with the most recent developments in science and technology. Education trains all aspects of the individual and fits him or her for future life. While the vocational aspect of the new information technologies needs to be stressed, educators should not forget that education is more than simply vocational training. Bearing this caveat in mind, the Community's Education Ministers have decided to embark on a programme for introduction of the new information technologies (NITs) into the school systems of the Member States. They have done so for a number of reasons.

First, it is vital that Europe maintain a prime position in the world economy, and new technologies are rapidly coming to replace traditional industries. In Scotland, for example, the number of people employed in the computer industries, now in excess of 40,000, is greater than the number of those employed in the coal, steel and transport industries combined, while according to a study run under Commission auspices[1] jobs in the NIT sector could provide openings for a quarter of the school-leavers in Italy in 1990.

Secondly, new information technology is becoming more important not just at work but also in everyday and private life. This is especially obvious in the mushrooming sales of video-recorders which lead the field in the UK: according to a Commission study, 28% of all households in Great Britain boast a video-recorder.[2] In France, the Club Méditerrannée network has pioneered holiday camps which offer the possibility of learning about computers through games and sports, and this scheme attracted over 100,000 participants in 1983. Meanwhile 642,192 personal and home computers were in use in West Germany and 437,500 in Italy in 1982. There has also been a rapid increase in computerisation of commercial and business life within the Community, most noticeably in the public, banking and insurance sectors. These examples show that there is considerable potential for NITs

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1 CIRSES, The Computer Generation: New Information Technologies and young people; European Survey General Report (Rome, 27 March 1985).

2 ibid.

to enhance citizens' lives in the Community in the future. But it is also important to remember that new information technologies may be used in ways which infringe the rights of the individual and are damaging to society. Here too early familiarity with NITs is a precondition for effective mastery of their use for positive human and social ends.

There again at the level of education itself NITs may prove to appeal to youngsters who would have become the under-achievers or drop-outs in more traditional school programmes.

In fact, the debate within the Community today is not so much about whether or not to introduce NITs into the education systems, but rather is about the best ways and means of doing so.

I. Background: Community initiatives to date

1. European Parliament texts

The Parliament adopted a resolution on 11 March 1982 on a Community action programme in the field of education[1] which considered that the introduction of new technologies necessitated political cooperation in the field of education and stressed the important role the Commission should play in improving understanding of the new information technologies.

Parliament also adopted a resolution on 17 May 1983 on vocational and new information technologies[2] which pointed out the decisive role to be played by education, training and retraining in filling the vacancies already occurring in the NIT sector, agreed on the need for a coordinated policy within the European Community, and welcomed the Commission's proposals for Community measures to supplement and strengthen vocational training policies of the Member States.

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1 OJ C 87/92 of 5.4.82

2 OJ C 161/32 of 20.6.83

2. Texts adopted by Council and Ministers of Education meeting within the Council

The Ministers of Education meeting within the Council adopted a resolution on 19 September 1983[1] which noted that it was ever more important for schools to familiarise young people with new information technology to provide better chances for future generations. Considering it essential that young people be taught not only to use information technology as a tool but also to judge its effects on everyday life and its social significance, the Ministers agreed on a set of initiatives to be taken up to the end of 1987.

On 4 June 1984, the Ministers of Education adopted conclusions which stressed the priority role to be played by education and training in the implementation of a strategy for increasing the innovative capacity and competitiveness of undertakings while ensuring that such technology served social and cultural requirements. Also emphasizing the importance of continuing training and the need for innovative approaches, the Ministers identified three priority areas for Community action, namely: the training of teachers; development of software and hardware, including the question of education/industry cooperation; and educational activities and research.

The specific forms of Community action envisaged by the Council were:

- exchange of information, comparison of approaches and identification of examples of good practice in the various Member States;
- particular attention to use of NITs to promote equal opportunities for women and to improve education of the handicapped (notably, in the latter case, by helping to create a commercially more viable market for producers of the specialised hardware involved);
- special attention to questions of hardware and software: the need for close Community cooperation, in liaison with the ESPRIT programme, to improve transferability of hard- and software, such cooperation in turn being based on cooperation between education authorities and both sides of industry at Community level.

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1 OJ C 256/1 of 24.9.83

II. The Commission's work programme for 1985-87

The Commission's work programme envisages action in the following major areas:

1. incorporation of NIT in teaching practices and the school curriculum;
2. the training of teachers and those who train teachers;
3. software, courseware and hardware systems; and
4. economic implications of the introduction of NITs in education and development strategies.

Dealing with the first area, the Commission has organised meetings in Marseilles and Newcastle where discussions were held on the place of new information technologies in various subjects in the secondary school. The Commission will also produce a handbook outlining the opportunities for using the NITs for mathematics and science. In the latter area, the Dundee College of Education carried out a survey under contract for the Commission investigating the impact of NIT on the science curricula in secondary schools. The main recommendations of the Dundee report were the desirability of non-examinable courses for all pupils at a very early age, such courses to include elements of basic machine operation and electronics. Specialised areas of computing such as micro-technology, advanced electronics and programming should be left to the older age-range of 15 to 18. In addition, the Dundee report investigated the use of the new technologies as a teaching aid, as distinct from NITs as part of the curriculum. As a result of this study, the Scottish Department of Education in the United Kingdom has introduced a certificate in computer education: as most educationists agree, the one way to give a subject respectability in the curriculum is to award it examination status.

In the second area, the training of teachers and those who train them, the Commission held a seminar in Bologna in May 1985. The central purpose of the seminar was to identify the constraints for initial and in-service training and to produce proposals for complementary action at Community level. When the results become available, they will be submitted to an ad hoc working party on NITs established by the Council.

In this same area, the Commission has embarked on a wide-ranging programme of exchanges and study visits for teachers and those who train them, and a symposium is due to be held in 1987 to draw together the conclusions.

In the third area: software, courseware and hardware systems, the Commission is working to promote close Community cooperation on the various hardware systems and the different structured computer languages, in the hope of achieving both greater compatibility and better adaptation to educational requirements. Major interests are nevertheless at stake in this area, which remains a subject of considerable debate.

Following upon discussions in Nice in the summer of 1984, a meeting of experts from the worlds of education and industry will take place in Germany in late 1985 to look at the question of information transmission technology in education.

The fourth area, economic implications of the introduction of NITs in education and development strategies, was not covered in Council texts and was added to the work programme at the Commission's initiative. New technology is very expensive and at present most education authorities in the Community are suffering from severe budgetary constraints as a result of the public expenditure policies pursued by Member States' governments.

The Commission recognises that massive provision of new technology in education has serious financial and budgetary implications for all Member States. The work programme therefore proposes to identify the parameters and possible methods of financing. While the work programme specifies that this is a fundamental question for the ad hoc steering group of senior national officials set up by the Council, the Commission will help to lay the groundwork for discussions by compiling information files on the costs incurred and the development strategies pursued in the different Member States.

The Commission's work programme, of which your rapporteur has provided an **illustrative** summary rather than an exhaustive account, is in line with the resolutions adopted by the European Parliament and by the Ministers of Education meeting within the Council.

The Commission has already launched a programme for vocational training in new information technologies and plans very shortly to put in hand a Community programme for advanced education and training in this field focussing on the dimension of industry/university cooperation. The present work programme thus forms part of an integrated approach to developing the Community's human resources in this spearhead sector and to ensuring widespread availability of the skills needed to guide the form and pace of future technological change in socially desirable directions.

CONCLUSIONS

The Commission's proposals are carefully thought out and represent welcome first steps towards opening a technological book hitherto closed to all but a few. It is to be hoped that the work programme will be built upon in the future but also that it will be extended as soon as possible to the acceding States.

The complexity of the issues involved and the scale of investment likely to be required if education authorities are to be adequately equipped in coming years are considerable. The fullest possible information needs to be made available to those responsible for policy at all levels in this area, and the results of the Commission's current programme should constitute a valuable contribution in this respect.

As an interested body which has expressed concern in this field, the European Parliament should be kept informed of the progress of work and of new developments affecting the programme.

Since Europe's future prosperity depends on a thorough understanding and mastery of new information technologies, it is imperative that budgetary restraints should not impede progress in this vital area. To enable the Commission to carry out the present work programme and subsequent programmes effectively, it would seem essential that appropriations for the relevant item in the Community's budget for forthcoming years be increased substantially over present levels.