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Directorate-General for Education and Culture

IMPLEMENTATION OF
"EDUCATION & TRAINING 2010"
WORK PROGRAMME

WORKING GROUP C

"ICT IN EDUCATION AND TRAINING"

PROGRESS REPORT
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1. INTRODUCTION

1.1. Political context in which this work is taking place

The work covered by this report relates to the follow-up of the Lisbon Council which set as a main objective that the Union should become "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).

To achieve this ambitious goal, Heads of States and Government asked for "not only a radical transformation of the European economy, but also a challenging programme for the modernisation of social welfare and education systems". In 2002, they went on to say that by 2010, Europe should be the world leader in terms of the quality of its education and training systems.

Making this happen will mean a fundamental transformation of education and training throughout Europe. This process of change will be carried out in each country according to national contexts and traditions and will be driven forward by cooperation between Member States at European level, through the "open method of co-ordination"[1]. It involves the sharing of experiences, working towards common goals and learning from what works best elsewhere.

To ensure their contribution to the Lisbon strategy, Ministers of Education adopted in 2001 a report on the future objectives of education and training systems[2] agreeing for the first time on shared objectives to be achieved by 2010. A year later, the Education Council and the Commission endorsed a 10-year work programme to be implemented through the open method of coordination. Approved by the European Council, these agreements constitute the new and coherent Community strategic framework of co-operation in the fields of education and training.

Twelve working groups[3] have each been working over the course of the last three years on one or more objectives of the work programme. Gathering experts from 31 European countries as well as stakeholders and interested EU and international organisations, their role is to support the implementation of the objectives for education and training systems at national level through exchanges of "good practices", study visits, peer reviews, etc.

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1 While respecting the breakdown of responsibilities envisaged in the treaties, the "open method of coordination" provides a new cooperation framework for the Member States with a view to convergence of national policies and the attainment of certain objectives shared by everyone. It is based essentially on:

- identifying and defining jointly the objectives to be attained;
- commonly-defined yardsticks (statistics, indicators) enabling Member States to know where they stand and to assess progress towards the objectives set;
- comparative cooperation tools to stimulate innovation, the quality and relevance of teaching and training programmes (dissemination of "best practice", pilot projects, etc).

2 http://register.consilium.eu.int/pdf/en/01/st05/05980en1.pdf

3 http://europa.eu.int/comm/education/policies/2010/objectives_en.html

With the support of a 'Standing Group on Indicators and Benchmarks', set up by the Commission in 2002, indicators and benchmarks are being developed to monitor progress.

"Information and Communication Technology in education and training" is one of the priority areas addressed by this work, and a specific working group has been set up in September 2001, the mandate of which comprised: work on indicators and benchmarks; the exchange of good practice; peer review.

Two progress reports have already been written: one in September 2001 corresponding to the first stage of the work described below, and one in November 2003, focused on good policy practices, and corresponding to the second and third stage of the work. The current report is the third progress report of this group.

The list of the members of the groups can be found in the Annex [Document N° 7]

1.2. Overview of past activities

The present report comprises a general review of the different activities that have been accomplished by the ICT expert group C during the last 11 months. The main part of the work has focused on the mapping of the recommendations presented in the report produced in 2003 on "good policy practices" for the integration of ICT in education.

As ICT was considered a priority sub-objective, the Working Group C started early, in September 2001.

During this first stage of the work – as foreseen in the context of the objectives report – the working group devoted its attention to deciding upon key issues on which to focus future work. One of the first problems encountered was the diversity of approaches to ICT practices and policies for education, including different understandings for basic working concepts. Mutual comprehension and consistency was therefore ensured by establishing an agreed set of definitions and criteria.

During the first year, participants in the ICT working group identified a number of indicators that could apply across all countries and provide a relevant account of the level of integration of ICT in education[4]. They stressed the fact that formative evaluation – by schools themselves through a questionnaire – could be further investigated, as a possible basis for pursuing such composite indicator, based on a fair sample of schools throughout Europe. Participants also underlined the importance of qualitative analysis, such as, for example, school portraits, which have been started in the context of European projects. A first interim report was produced for the first year, the results of which have been integrated into the 2003 report.

The second stage of the work focused on good practices and on sharing policies that aim to develop better quality education through the integration of ICT. Learning by example, from best-practice cases, is a very effective means of understanding the principles and

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[4] Starting from three areas of attention (school, teachers, pupils), four indicators or set of indicators had been defined as follows, while recognising the lack of « output » indicators :
School (resources) -> Availability of a school network
School (processes) -> Use of ICT for teaching and learning
Teachers (processes) -> Initial and in-service Teacher Education
Pupils (processes) -> Use of ICT for Learning
[Interim working document for the objective 1.3 – September 2002]

the specifics of effective practices. When participants learn about successful practices in other organisations they can draw on those cases to develop solutions that are most suitable for their own organisations. This stage of the work began with an in-depth analysis and reflection on criteria and on existing studies and produced a compilation of a first series of contributions. However, following a request to all working groups to focus attention on policies, work on 'good' educational practices contributions was postponed.

The third stage of the work concentrated on gathering 'good policies' examples, using a revised template produced by the group and a new input on criteria. This second series of contributions was devoted to outlining the problematic dimensions that the policies brought up. Building on the contributions and on discussions ongoing at that stage of the group work, the different questions brought up were summarized in eight key issues[5]:

Four final recommendations were issued:

– Embed ICT policies and strategies into long term educational objectives;
– Ensure new support services for education;
– Empower educational actors and train for the management of change;
– Develop research, establish new indicators and provide access to results[6].

The fourth stage of the work has consisted in gathering examples to map the four recommendations that concluded the 2003 ICT Expert Group Report on good policy practices. Several meetings were geared to disseminating information and establishing links with the work of Group A (Education and training of teacher and trainers) and Group B (Basic skills). They were also geared to opening the scope of Group C's field of investigation to higher education and vocational training, and mapping the recommendations of the 2003 report with interesting and enlightening examples. Four study visits were held, one in Lisbon on competence centres, one in Paris on policies for managing educational multimedia and digital resources for education, and policies for fostering digital literacy at all levels, one in Bonn at the Schulen ans Netz Association and, finally, one in the UK on Special Needs Education.

Participation in group activities has been well sustained both by experts from member countries and by stakeholders in group meetings as well as in contributions to the different productions of the group.

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5 Eight issues as follows [Progress report 2003 (ref. below)]:

-> Framing ICT integration in education with long term objectives;
-> ICT in education for teachers and students;
-> Attending to change in learning institutions;
-> New curriculum and new skills; equitable and accessible ICT services for schools;
-> From technology-push to education-pull (educational portals, resources and networks);
-> Need for new educational ICT indicators;
-> Evaluating and researching educational processes and outcomes.

6 in [Progress Report November 2003 - Working Group "ICT in education and training" - Implementation of "education and training 2010 workprogramme"], that can be found at: http://europa.eu.int/comm/education/policies/2010/objectives_en.html#information

2. PRESENTATION OF THE WORK ACHIEVED AND THE MAIN FINDINGS

2.1. Group meetings

Four new meetings bringing together the initial ICT expert group and representatives from accession countries and stakeholders at the European level have taken place since December 2003 (8th of December 2003; 13th of February 2004; 30th of April 2004; 11th of June 2004). All documents produced have been available throughout the group's work on a Commission Intranet system (CIRCA) which was open to the group participants and to other "Education & Training 2010" groups.

Discussions were held on following up the group's work on the different aspects of its mandate:

(1) Possible indicators for monitoring the access, use and efficiency (from an education quality point of view) of ICT in education and training;

(2) Proposals for ICT-related policies linking the recommendations which had been formulated in 2003, and providing some concrete examples about how the recommendations could be implemented;

(3) Recommendations addressing the widening of the scope to the higher education and vocational training sector.

2.2. New outcomes

These discussions and related work led to the following outcomes:

2.2.1 Confirmation of the relevance of recommendations that have been made

It was made clear that the recommendations which have been formulated last year are still sound and valid. As stated by one member of the group, education does not change in six months. Important discussions also took place during the Italian and Irish Presidency events. They confirm the soundness of recommendations that were formulated in 2003, even building them further and adding some precisions to what had been formulated. The recommendations may be found in section III of this draft progress report.

2.2.2 Indicators

The questionnaire (teachers, head of schools_ which have been designated in 2000 – for getting the necessary data to be used for the eLearning benchmarks of the Europe benchmarking process – have been upgraded and a new version of each questionnaire has been finalised by the group.

A draft report on indicators has been written, it leads to a number of recommendations and conclusions which was sent to the working group, dealing with indicators and benchmarks (the Standing Group on Indicators and Benchmarks). [Annex Document N° 1)

A main conclusion of this report is the reiterated difficulty to properly address the ICT field with indicators which are set without properly addressing what is to be monitored, especially with respect to the real ICT contribution to education and training. It is very difficult if not impossible to assess ICT integration and implement information gathering procedures without having properly indicated which goal is pursued with the integration of ICT.

This decisive point was stressed by many participants. While the first progress report had given a technical definition of indicators as "*processed information that is used for measuring quantitative or qualitative progress [and due] to be relevant, summarised, structured, precise, reliable, and comparable*", the last discussions highlighted the political nature of indicators and the consequent importance of firstly defining the political goals to be achieved. The role of indicators should be to allow comparison between the existing situations with national or European policy objectives. Policy is the basis: for example, a country wants to reduce the distance between the existing situation (stats) and a desired situation (policies). Statistics need contextualised information to inform policy analysis. Any data always provides an historical view referring to reality in context.

This definition has several implications:

– Indicators should ideally permit to monitor the recommendations that have been formulated by the group; which the current indicators don't do, as there are few reliable data to address the group's recommendations on what to monitor. Some of the data, gathered for the *e*Europe benchmarking process, could fulfil this request but, according to Member States representatives, the methodology used to gather these data is not reliable enough for building indicators, if the technical definition given above is applied;

– As political objectives are evolving in this fast changing domain, political objectives and related indicators which were considered as relevant – from a political point of view – in 1999 may not be as relevant in the 2010 perspective[7];

– As policies are set at national or regional level, there may be different sets of political objectives, and consequently, of indicators according to the different political contexts.

2.2.3 New range of policy examples

As stated in the introduction, the group work already went though the gathering of 'good examples' from Member States and from accession countries. These examples have addressed 'ICT in education' innovative practices and 'ICT in education' policies.

The new gathering, which was made, aimed at providing concrete examples of those recommendations already followed up in some countries, thus providing guidance to the others on whom they could contact and how they could follow the given recommendations.

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[7] For example, while 'digital literacy' was at stake in 2000 – defined in a rather narrow technical way – 'media competence' or 'higher-order skills' related to information, communication and knowledge may be at stake in a long-term perspective.

The choice was made to make these new contributions short and easy to read, so that they could be made available to a general public on the site of the European Commission. The related report now includes some seventy examples from twenty-four countries. These examples show concrete instances of development of educational ICT for:

– Recommendation 1: Linking ICT implementation to long-term education objectives ;

– Recommendation 2: Attending to the needs and demands of educational actors involved with ICT by developing new services ;

– Recommendation 3: Training educational actors for change with ICT ;

– Recommendation 4: Developing evaluation, measuring results and linking ICT educational use with research.

Each example was reformatted (and sometimes translated) to allow for a homogeneous presentation of about half a page to a page per case with titles, key words and hyperlinks to more extensive information than allowed by the format adapted here.

2.2.4 New recommendations addressing Higher education and vocational training

For the follow-up of the recommendations, an opening to other educational levels, higher education and professional/vocational training, was discussed in the ICT group and addressed in a paper still under revision.
There are several reasons for extending the field of the ICT group to higher education and vocational training, but there are also obstacles. One important obstacle lies in the fact that many of the experts, who represent the Ministry of Education of their country, represent the initial education sector. They are not in a position to represent the higher education sector. The Ministries of the European countries follow different patterns for the organisation of education, which can be the object of one or several Ministries. It has been suggested that the corresponding experts could be invited to the ICT group when higher education or training issues are on the agenda.

The reasons for enlarging the scope of the ICT group stem mainly from the fact that in practice there is a close connection between universities and the ICT practices and uses in schools or training centres. Already several of the examples in the ICT data concern higher education students and vocational trainees. Some examples refer to a national ICT educational policy which includes universities. Also, the examples dealing with teacher training involve the universities where teacher training units are located. Finely, new organisational set-ups, such as “Competence Centres” (Cf. following point) also bring together schools and universities.

Vocational training, with the lifelong perspective that is being developed is integrating more and more IC technology and is developing interesting uses and services, based on the use of ICT, that can spur the imagination of teachers and enrich their use of ICT.

Of course, enlarging the scope in this way would also entail discussing the validity and appropriateness for higher education and training of the existing recommendations and the inclusion of specific recommendations.

2.2.5 Study Visits

(a) Portugal: Competence Centres of the NONIO Portuguese programme

A two-day study visit has been organised by the Portuguese member of the ICT group, Ida Brandao, of the Portuguese Ministry of Education on the theme of "Competence Centres".[Cf. Annex Document N° 3]

Competence centres originally come from the industrial sector. The main goal of a competence centre is to become a "source of accumulated know-how and expertise that are processed and are accessible for all partners of the competence centre." (Neumann, Stingl & Grillitsch, 2001)

Educational ICT competence centres have **five main objectives:**

(1) **Training**: educate, divulge and make teachers aware of ICT tools, aiming at an increasing integration of those tools in education;

(2) **Resources**: Support activities and projects for the creation of educational resources, in ICT area, in an educational context;

(3) **Methodological Support**: Support the implementation and development of cooperative projects; assist in the organisational and methodological dimensions;

(4) **Collaborations**: Establish partnerships between primary, secondary education and higher education institutions, and with private sectors and entities, national or foreign, preferably related to education and training;

(5) **Research**: Experiment new uses and new environments; evaluate existing practices; generate new knowledge on educational practices.

To attain these objectives, competence centres have to work as 'knowledge-generating learning communities' or 'learning laboratories' consisting of teachers (field practitioners), trainers (who also play the role of consultants), and researchers (reflective analysis). These clusters of knowledge and expertise develop, through collaboration and participation, a network of competent practitioners. By means of ongoing reflection, they explore lessons learned, as well as stories of success and failure, progressively ensuring learning and increasing the scope of competence of the school teams.

This formula is relatively new in education. Portugal was a judicious choice for a study visit of Competence Centres, as this approach has been applied quite successfully in this country for the last seven years. The existing competence centres were set up in continuation of the "nodes" formula, established in a previous Portuguese Minerva programme. It is obvious that these competence centres have contributed to the development of ICT in Portuguese schools, through training of teachers, development of resources and attending to the problems that teachers and users have had to cope with. These centres are resource as well as research centres and many of them have initiated or strengthen links and cooperation between higher education and primary and secondary schools.

A **recommendation** to the ICT Expert Group would be to document further the report resulting from the Portuguese visit, by gathering information on other European Educational ICT Competence Centres and by asking the Commission to produce an information brochure on European educational ICT Competence Centres that could be available for the different countries.

(b) France: Digital multimedia educational resources and competences

A study visit was organised in Paris (15th and 16th of June 2004) by the French member of the ICT group, Odile de Chalendar, of the French Ministry of Education, Higher Education and Research on the theme of policies concerning digital multimedia educational resources, and the issues of certification of students' and teachers" ICT skills and competences. [Cf. Annex Document N° 4].

These two themes were developed by conferences presented by different members of the French Ministry and by inputs from the participants of nine other countries and group discussions conducted throughout the two day meeting. The different themes, some as options already chosen in different countries, some as problematic issues, that were addressed, include:

- Providing students at all school levels with mobile computers for flexible learning,
- Harmonising across Europe the training of teachers,
- Providing discipline-based e-content for teachers to use,
- Building up a digital knowledge base, enhancing digital content and developing a framework for its storage and retrieval,
- Helping teachers become familiar with ICT through ICT based administration systems in secondary schools,
- Delegating tasks of managing rights of school ICT culture to external organisations,
- Setting up a national ICT Certification system for teachers and students or integrating ICT in all disciplines?
- Providing a single gateway to Learning Resources Databases including traditional and ICT based learning materials,
- Designing locally adapted centres such as competence centres which take into account the characteristics of local schools, cultures and working traditions.

(c) Germany : Schulen ans Netz Association

A study visit was organized in Germany (22nd and 23rd September 2004) by Kerstin Ciba, of Schulen ans Netz Association. The main objective was to present some of the Association's initiatives in its role of competence centre covering all aspects of the use of new media in schools mainly identifying and disseminating good practice, as well as offering online tools, content and support for teachers, school authorities and parents. [Cf. Annex Document N° 5].

During the visit participants were able to analyse some of Schulen ans Netz activities and assess their role in the overall strategy of the Association and of the German Federal Ministry for Education and Research.

The main projects analysed are examples of ICT Group Recommendations 1. “Embed ICT policies and strategies into long term educational objectives” and 3.”Empower educational actors and train for the management of change”.

(d) UK : ICT in Special Needs Education

A study visit was organised in the UK (4th and 5th October 2004) by Amanda Watkins, of the European Agency for Development in Special Needs Education, on the theme ICT in Special Needs Education. Within the study group were representatives from the Czech Republic, Denmark, Germany, Greece, Lithuania and Malta as well as BECTA, UK and the European Agency for Development in Special Needs Education. [Cf. Annex Document N° 6]

This theme was developed by participants’ presentations of issues evident in their countries, participants’ reports of issues arising in from the visits and finally issues arising in discussion sections.

The recommendations made were the following:

1. The ICT Working Group actively applies the principle of mainstreaming special needs education related issues in all of its debates, reports and reflections.

2. Within all of its debates, reports and reflections, the ICT Working Group recognises and attempts to raise awareness about the dual nature of ICT usage with pupils with SEN: ICT as a learning tool, but also in many individual cases ICT as lifeline technology.

3. The ICT Working Group considers including a specific indicator on the use of ICT in SNE in its recommendations to the Standing Group on Indicators.

4. Through its own work and through the active work of all its members, the ICT Working Group attempts to raise awareness of the need to consider SNE issues within all areas of the 2010 Objectives work.

The participants in the ICT in SNE study visit also share the view that ICT has enough potential to be a beneficial tool in implementing inclusion; the principles of equal opportunities with real access to learning; respect for differences in educational systems approaches and individual’s learning preferences and finally, quality education for all, focused upon strengths instead of weaknesses. However, the successful inclusion of ICT in the curriculum for all pupils with SEN will only occur when the full potential of ICT as both adaptive/lifeline technology and a tool for learning is understood and this may need more specialist policy and practice initiative and support than is currently in evidence at EU or National levels.

3 MAIN RECOMMENDATIONS/MATERIAL DRAWN ON THE KEY ISSUES DISCUSSED

3.1 Embed ICT policies and strategies into long term educational objectives

Given the fundamental changes in education and given the ICT potential, it is vital that policies and strategies in the area of ICT be driven by long-term educational objectives. The role that ICT plays for fostering production in the economic system should not obscure the role that ICT may play in fostering citizenship and personality building in the education system.

The general rationale for integrating ICT in education often lies with the growing importance of ICT based resources and services in society as a whole, the complexity of the tools available, and the pressure to make education more cost effective and employment compliant. Long-term educational goals, the so-called foundations of knowledge, are usually implicit and as such are rarely questioned, in order not to disrupt the assumption that there is a general adherence to them. Making them explicit in order to establish ICT objectives and priorities is no easy task. Some countries are however revisiting not only the curriculum, but also the fundamental goals of education and the organisation of their educational institutions and activities. Exploring their ICT policies and their action can facilitate the work to be done by others.

3.2 Ensure new support services for education

Services are an essential component of ICT-supported learning provisions. Both on-line and 'physical' services should be funded and made available for technological and educational support.

This may involve specific investments in services infrastructures. For example, the setting up of agencies, competence centres, local 'club houses' appeared to be very successful in several countries. The transformation of school libraries or municipal libraries takes place as answers to the political will of developing open learning centres, of completing formal learning provisions by non-formal ones for lifelong learners. An 'educational multimedia clearing house' project is also being investigated as a possible model for facilitating the exchange of know-how and public domain educational materials at European level.

Specific investment in staff development and specific human resources are also required: support teams, pedagogical and technical helpdesks, etc. Such services may also aim at a better personalisation of learning paths, tutoring and guidance facilities for learners, which is the long-running (but not much achieved) claim of using computers for learning.

3.3 Empower educational actors and addressing new challenges

Educational actors, students, teachers, trainers, administrators and school directors need to be empowered through ICT-inclusive educational policies.

Teacher education appears as one of the most important arenas for addressing the integration of ICT in education. The ability of teachers to critically reflect on their own practice should be encouraged through specific methods and tools. ICT can be a catalytic element for achieving such 'reflective practices' or other methods for upgrading teaching and learning processes.

However, policies have to take into account environmental conditions for such methods to be developed. Teachers still appear as "a problem" for ICT-policy specialists. It has been estimated, in several countries, that 80 % of teachers do not make real use of IC technology at their disposal. Social pressure on using ICT in education is such that, in some cases, teachers claim to use it even when they don't. The involvement of teachers in demand-based strategies then appears as a pre-requisite if one wants to go beyond the "pilot" or "pioneer" level of implementation.

Several policies now address this necessary involvement. There is also an increasing involvement of heads of schools – sometimes jointly with parents and local decision-makers – to help them to cope with new challenges.

Students' empowerment stays an important recommendation. Most successful cases of ICT use in education lie in such empowerment. However, the pioneer effect may be one of the reasons for existing motivations in involved actors. Sustaining such empowerment calls for new learning environments, and may involve changes in curriculum, changes in learning spaces and time and new pieces of software. For example, software like the "Gene Technology Program" in the Norwegian Viten project, which has been developed for training students to scientific argumentation may be a good example of how ICT can foster new learning processes.

3.4 Develop research, indicators, access to results and specific fields of application

Much effort and funding have been devoted to technological research and development. However, it was stressed in the previous report and should be repeated that social science and educational research should get more sustained funding. The working group also recommended that more should be done with results from past and current research or pilot projects. Though information on more than 800 hundred European Community projects is available from the e-learning site [www.elearningeuropa.info[8]], recommendation was made that additional attention should be given to thematic analysis of such European projects. The same recommendation should be addressed to the analysis of national and regional pilot and research projects. What has been assessed as 'good practices' or 'good policies' should be systematically evaluated and thoroughly analysed. This could possibly lead to a network of the national or regional bodies conducting such evaluations, and exchanging know-how on qualitative and quantitative evaluation methods.

There is a need to shift to new specific research areas addressing more problematic issues, such as the growing number of 'unquestioned assumptions' and slogans in the ICT field. For example, the whole issue of 'ICT basic skills: there is an unquestioned assumption that any pupil or teacher should go through some obliged steps before accessing to some more higher-order uses of ICT. Skinnerian approaches support such views in setting the obliged path which all learners should follow. However, there is much research evidence that most adult learners have so far taken short cuts, and that teen-agers – for example - are able to set up sophisticated web sites without having gone through such "basic skills" compulsory path.

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[8] The 'elearningeuropa.info' site is a European Commission initiative managed by an external organisation

As students enter school with a growing ICT familiarity, the definition of basic skills – to be addressed by the educational integration of ICT – needs now to embrace more and more higher-order thinking skills, and a global vision of media education to prepare young citizens in a world where mass-media play an increasing role in setting communication spaces which have their own values and models.

Another unquestioned assumption relates to the fact that – if ICT is everywhere in offices – it should be everywhere in schools. Strangely, no one questions the adequacy of office tools for educational purposes. This issue of the relevance of IC technology for educational purposes needs to be addressed in order to determine where ICT is pertinent, where it is vital, where it is cumbersome and useless as well as determine what the conditions for an optimal use are. Problems of school architecture, of schedules and class units are often mentioned but there is very little information available on what are the best solutions to be implemented. Important issues were brought forth during the Irish Presidency conference which took ICT in education as its main issue of discussion[9]. Several speakers argue that what happens in schools should not naively replicate what happens in the society. While media are everywhere in society, reading text should – even more than before – be given attention in schools; while there is "noise" outside, one should stress the importance of places where one learns to reflect and work in "silent concentration"; while violence may increase, pupils should learn to overcome conflicts; etc.

Finally perhaps the most significant assumption is that integrating ICT is bringing about fundamental changes in education. There is a need to revisit, not only what is meant by change and if change is desirable in education, but also how school systems and pedagogical approaches change. Changes with ICT can be limited to student-centred, multimedia learning, without changing the school curriculum, thus progressively invalidating the changes. School reform is not a spontaneous consequence of the introduction of ICT, as was noted from one contribution to the conference.

An important problematic issue concerns the organisation of educational spaces for ICT use. Integrating ICT can mean anything from complete online training, with specific learning platforms using virtual microworlds and laboratories, to online access to/ and control of/ distant physical set-ups such as greenhouses or physics laboratory; it can also mean working with in a face to face situation in a laboratory with digital controls and computer based mathematic tools. How is this taken into account by current school architecture decisions? What are the priorities in setting up building that will include such ICT-based activities?

Research on new learning processes and methods should be given much more emphasis that what is the case today. Researchers and educational actors need to question the relevance of ICT to education and training in the light of the educational goals pursued, and assess much further how ICT is used, and how it may foster or weaken learners' abilities to learn in specific educational contexts.

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[9] New Futures for learning in the digital age - Dublin May 2004 http://www.newfuturesforlearning.ie – Report by Aidan Mulkeen

An important issue is the future of learning platforms. Across universities and training centres, specific learning platforms have been set up, built on the assumption that in the future, education would be online or at least "blended" or with online teaching and learning activities. These platforms entail several problems, such as their technological obsolescence, the constraints and normalisation of educational interactions, without mentioning their costs. Is standardization a desirable objective in education? Are learning models imposed upon education through either technical or quality standards? What are the advantages and the limits of "industrialising" university education? As institutions and stakeholders attend to implementing these platforms, there is an urgent need to look forward and examine these choices in the light of the fundamental educational objectives.

The whole issue of technical standards and formats has also been brought to the forefront with the need to share and make available on a large-scale contents that are very costly to produce. Up until now, the decisions concerning which metadata are to be used to describe educational contents have been mostly taken by computer specialists, and teachers have been barely involved. Educational designers are already coping with the constraints that these choices are imposing on the concrete educational activities that will be developed. Here again research and involvement of the concerned actors should be priorities.

4 PROPOSED FUTURE WORK PRIORITIES

1) A first hypothesis is to continue the work begun on the integration of ICT in education.

There are several reasons that support this position:

– Representatives of Member States are very much involved in the integration of ICT and have maintained a strong participation in the group C activities;

– The group has a mix of people at the decision-making level and people with a more academic profile;

– The active involvement of "stakeholders" such as the CSEE, the European Confederation of Syndicates, the European Schoolnet, the European Vocational Training Association, MENON, EDEN, l'IEA, all these organisations equally working in projects that concern the issues tackled in group C;

– A link with the work of the eLearning committee, which could provide it with an operational status in group C, more oriented towards reflective work and comparative evaluation; furthermore, the eLearning programme is more focused on projects having a European dimension than Group C which concentrates its work on exchanges dealing with national or regional programs.

2) Open the group work to Higher Education and vocational and professional training.

Going along with the work already undertaken, the perspective is to open, by the end of 2004 and the beginning of 2005, the field o the ICT group to the domain of higher education and professional training.

As already noted, this opening is problematic for those members of the group who belong to Ministries whose mandates are limited to primary and secondary schools, but it is considered with interest by those members that deem it necessary to extend the work of the group and who have mandates also for higher education and vocational and professional training.

The opening to higher education is crucial as it may, inter alia, ensure better links between education and research. Higher education has – by tradition – been at the forefront of knowledge production, management and dissemination. Relevant institutions should play a key role as interfaces between research and all educational sectors. Moreover, the use of ICT in education at all levels requires new pedagogical and organisational settings. Therefore, cross-collaboration between education, social science and 'hard science', and within the different fields of research, is needed.

This issue will have to be discussed further with the other groups concerned.

3) Focusing on one of the recommendations

Another hypothesis for the group work would be to concentrate on one of the recommendations and look more specifically at its implementation, the evaluation of what has been accomplished and the policies involved.

As a matter of fact, the work on « good policies » has brought an end to the gathering of good pedagogical practices and has geared attention to micro-social or micro-economic approaches rather than in-the-field practices.

The group could refocus its activities on field practices and organisational, regulatory or financial aspects that have allowed going forward and that could be interesting to explore.

For example: services:

The issue of « services » is the basis of one of the 2003 Report final recommendations and could be developed further. Centres open to different types of publics have been explored in several countries:

– Competence centres in Portugal, Netherlands, Sweden, to name but a few countries, are centres that allow training in-the-field of teachers to pilot collaborative projects innovatively involving ICT.

– "Multimedia school libraries" in Norway have been reorganised to develop convivial areas for training, open to students as well as to teachers;

– "Club Houses" in Ireland are being developed in poor sections of Dublin as areas for exchanges and creativity – involving ICT – for the young people in the neighbourhood;

– Renovation of « municipal libraries » in Glasgow in order to open then to new publics and users.

4) Develop the ICT dimension in all the other working groups.

This could also be on of the priorities, as it is becoming more and more obvious that the changes in pedagogical paradigms, the evolutions of learning environments, the pervasiveness of digital information and communication technology and the coming of age of an information rich society has implications and important consequences for all aspects of education, for educational institutions and for educational actors' roles and competences.

This situation will sooner or later result in a need for decision makers to revisit all educational policies, especially those focused on ICT integration.

5) Recommendations for short-term focus of ICT group

The immediate work of the ICT group needs to address two problematic issues, while continuing a pedagogical and technological watch on how ICT integration is involving:

- Point out to researchers and educational actors the unquestioned assumptions that hinder ICT integration;
- Revisit the important developments going on concerning standards, metadata, and learning platforms, by assessing their interest in view of long term educational goals and methods;
- Evaluate the design process and impact of current indicators and work out more appropriate ones.