The challenges of the information and communication technologies facing history teaching

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With only questions relating to national defence excluded from the Council of Europe's work, the Organisation has activities in the following areas: democracy, human rights and fundamental freedoms; media and communication; social and economic affairs; education, culture, heritage and sport; youth; health; environment and regional planning; local democracy; and legal co-operation.

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1. Albania, Andorra, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, San Marino, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, "the former Yugoslav Republic of Macedonia", Turkey, Ukraine, United Kingdom.

The CDCC's programmes are an integral part of the Council of Europe's work and, like the programmes in other sectors, they contribute to the Organisation's three main policy objectives:

- the protection, reinforcement and promotion of human rights and fundamental freedoms and pluralist democracy;

- the promotion of an awareness of European identity;

- the search for common responses to the great challenges facing European society.

The CDCC's education programme covers school and higher education. At present, there are projects on: education for democratic citizenship, history, modern languages, school links and exchanges, educational policies, training for educational staff, the reform of legislation on higher education in central and eastern Europe, the recognition of qualifications, lifelong learning for equity and social cohesion, European studies for democratic citizenship, and the social sciences and the challenge of transition.

About the author

Jacques Tardif is full professor with the Sherbrooke University Department of Education (Quebec, Canada). He is also involved in initial and further teacher training. For over twenty years now, on the basis of his doctorate in educational psychology (Ph.D, research and intervention), he has been studying the dynamics of learning, transfer of learning processes and school motivation. In line with these three dynamic processes, and stressing the idea that the teaching rationale must be subordinate to the learning rationale, he has lectured in various milieus on the development of pedagogical and evaluative practices that emphasis the strategies adopted by pupils in their knowledge construction and skill development processes. In all his initial and further training activities Jacques Tardif stresses the principle that the school must give precedence to the meaning attributable by students to their learning processes. Over the past several years, he has been giving lectures on incorporation of the information and communication technologies into schools with a view to ensuring that schools enable pupils to attribute as much meaning as possible to their learning.

Other works by the author include:

Pour un enseignement stratégique: l'apport de la psychologie cognitive [Towards strategic teaching: the input of cognitive psychology], Montreal, Les Editions Logiques, 1992

Intégrer les nouvelles technologies de l'information: quel cadre pédagogique? [Incorporating the new information technologies: the educational framework], Paris, Editions sociales françaises, 1998 [in co-operation with Annie Presseau]

Le transfert des apprentissages [Transferring learning processes], Montreal, Les Editions Logiques, 1999.

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Foreword[1]

Learning and teaching the history of the 20th century in Europe

Often considered by historians as the most difficult to study and to teach, the 20th century is the subject of a specific project on "Learning and teaching about the history of Europe in the 20th century". In 1993 and 1997, the two summits of heads of state and government of the Council of Europe member states called upon the Council to develop in particular activities and educational methods relating to this period. The Parliamentary Assembly expressed a similar wish in a recommendation on history and the learning of history in Europe, adopted in 1996.

This project represents a complete teaching kit and may be described as an "atom" in which "satellites" gravitate around a "nucleus". This nucleus is a handbook for history teachers, devoted to the methods and different ways of presenting the 20th century to pupils. A Scottish historian, Robert Stradling, has prepared this work which comprises educational chapters and practical worksheets and exercises based on concrete cases and themes. While drawing on and amplifying the Council of Europe's recommendations already adopted in the field of history, he has adapted them to the problems and difficulties of the 20th century, taking into account the intellectual, political and social upheavals which have marked it. He has also attempted to identify the omissions and falsifications in the presentation of the century and deal with contentious issues, the source of conflict, confrontations and misunderstandings.

The satellites are teaching packs looking at women's history, population movements and nationalism in 20th century Europe. They are supple-

1. This foreword is based upon a chapter previously published *in Lessons in history* (Council of Europe Publishing, 1999).

mented by reports and contributions on, amongst others, the use of new technologies in teaching, the problem of sources in contemporary history and the study of misuses of history. All these components form a teaching pack which can be used by all teachers and adapted to their needs and resources.

Specifically dealt with by several reports and workshops, the question of the collection and exploitation of source material for 20th century history is also included in the project within a transversal approach. It seeks to initiate pupils in the consultation and use of archives as a documentary basis or discussion theme. But unlike previous centuries, the 20th century can be studied and interpreted through new media such as the cinema, radio, television and more generally images which accompany or indeed replace written information.

These new sources must be inventoried and known, decoded and assessed. The power of images, whether still or moving, also increases the risk of the spectator's being manipulated: propaganda films shot by totalitarian regimes are perhaps the most tragic illustration of this, but omissions and misrepresentations – including those made by editing techniques or clever camerawork – are also a feature of films or documentaries which lay claim to objectivity or information. By discovering these techniques, deliberate or not, today's pupils who live in a permanent audiovisual environment will also learn how to be more critical towards it when watching television news programmes or a "contemporary" film.

Clearly, however, above and beyond propaganda and manipulation, the gradual transition from the written word towards an image society is also a historical phenomenon worthy of study. In this context the project offers teachers a filmography of the 20th century containing the 100 most significant films. These are to be used to shed light upon their period, both historically and culturally, and prompt discussion.

The project also seeks to encourage the use of sources which are little used in teaching, such as oral history. Sometimes, this is the only source available on a particular event or living environment and can provide an insight capable of counterbalancing the official history; increasingly it makes for more personalised history by giving the speaker the role of witness. Some schools already invite former members of the resistance or

former deportees to recount their memories, thereby enabling the listeners to put the period in context. Similarly, life in a factory can be illustrated by a talk by a former factory worker. However, oral history must also be multiple, since, like any other written or visual source, it too can lack objectivity.

The most recent technology, computers in particular, can also provide new sources of information, such as CD-Roms or Internet sites, but they can also be used as a means of teaching. Here too, it is important to help both teachers and pupils select and evaluate the plethora of documents available on the Internet, and to encourage them to look at their source, their reliability and all the risks of manipulation or omission which they may contain. For teachers, using the Internet means first of all knowing how to use it: depending on their training and their own attitude to such tools, teachers can be very much in favour or very much against. The project therefore seeks to help them use these tools which will provide them with text and images. In this way, Internet sites and CD-Roms can be valuable supplements to textbooks and lessons.

Nevertheless, while these new tools have significant educational potential, teachers attending the training seminars stress the fact that they cannot replace books and papers and that while they do open new avenues, they will not completely revolutionise teaching. Furthermore, many teachers point out that their development in school is at present still limited because of the cost.

The teaching packs are in the form of loose-leaf files or ring binders each containing fifty or so pages designed for ease of use by teachers. They contain text, images, studies on themes and model exercises or workshop activities.

The first pack, on women in history, fits in with the Council of Europe's desire for fair representation of both sexes in society, but its aim goes far beyond simply redressing the balance. While emphasising the role of women in society, too long overlooked, it also seeks to view history from their perspective. Several seminars were held on this project which is based on specific collective or individual examples. Amongst these, the role of women in Stalin's Russia illustrates the life, activities and image of women of the time, and the period through them. From Evgenia Ginsburg to Marie Curie, Agatha Christie to Melina Mercouri, biogra-

phies of women could provide the framework for lessons or themes, but it is also essential to present ordinary or unknown women and their views on events and the world. For that, the use of oral history must be encouraged: the teaching pack suggests examples and interviewing methods which could be used with women who have lived through historic events or who are representative of a period or a theme.

The pack also contains general subjects to be addressed in lessons, such as the struggle for the right to vote, working women or the image of women. It also deals with bias and omissions in the presentation of women in history and consequently has resulted in a genuine work of historiography conducive to comment and critical judgement.

Conceived in a similar way the pack on nationalism goes beyond mere definitions of the phenomenon to look at the more day-to-day aspects, even including topics such as sport or currency. It covers the major historic consequences of nationalism, such as shifting borders or the break-up of empires (Austria-Hungary, the Ottoman Empire and the Soviet Union) and looks at relations between majority and minority groups within states. It then discusses the cohabitation of groups and the means of living together, for example via federalism. The pack, like the two others, is supplemented by a bibliography including written documents, films, and also CD-Roms and Internet sites.

The pack on migration examines population movements in Europe in the 20th century, the reasons why individuals and groups change countries and the cultural and social exchanges which result from these movements. Not restricted simply to the major migration waves of recent decades, it also covers transfrontier movements caused as a result of border changes or economic necessities, as in the case of border workers. It seeks to illustrate the situation and views of migrants as inhabitants of a host country, while facilitating dialogue and mutual understanding concerning increasingly similar concerns and lifestyles.

The Holocaust is also dealt with by the project. Teaching it, above and beyond the facts themselves, should personalise events through the life of victims, for example before and during the Holocaust. A 15-year old adolescent will be more moved by the story of a young person of the same age before and during the war than by an overview of the period, and will develop a more concrete understanding of the extent of the

tyranny and crimes. At a time when anti-Semitism is growing alarmingly in certain countries, it is important, over and above the facts, to point out that anyone could one day become the victim of such crimes, but thought must be given to the mechanisms which can, at the same time, turn normal individuals into torturers and executioners.

The project also examines the way in which the history of the 20th century is taught across Europe, in textbooks, syllabuses and lessons. It calls on teachers not merely to pass on facts but to deal with the practical expression and memory implicit in those facts. The concept of "place of remembrance", conducive to discussion and recollection, also introduces the idea of cultural heritage, which should not be restricted to a palace or a church, but should also include sites recalling the darkest hours of the 20th century, such as the trenches of 1914 or the concentration camps.

The theme of "living memory" can be illustrated by using little known documents such as letters sent by soldiers in the Great War to their families; these also provide an individual dimension to a collective event. Maps and photos, like film extracts, often speak more effectively to pupils than a mere chronological listing of events, and the presentation of a memorial also shows how a conflict affects a country or a region.

Lastly, comparative studies have been made on the training of history teachers and these serve as a basis for recommendations. Depending on the country, future teachers move directly from university to the school environment and their academic qualifications are supplemented by teacher training varying from short courses to one or more years of preparation for entry to the profession. The project sets out to assess and inventory the various models of teacher training although it seeks only to improve them and not to make them uniform. It insists on the need to develop in-service training for teachers, in both teaching techniques and in the choice of themes which should be presented to pupils.

The project aims to enable history teachers in Europe, whatever country they are from, to develop methods and themes adapted to the specific nature of 20th century history. It also aims to help them to incorporate all documentary sources and subjects into their teaching, and also to adapt their approach to modern technological developments. The project underscores the specific nature of teaching 20th century history in relation to history training in general, and insists that the 20th century should

be presented in a way which is more open to the outside world and enables pupils to understand this world more readily. Dynamic and appealing, such teaching must remind pupils, confronted outside the classroom by numerous external sources of history information, that school is the most appropriate place to learn about and analyse the history of Europe in the 20th century.

The school answers questions
that pupils do not ask and fails to answer those
they do ask.
(Develay, 1996)

Introduction

Against the background of the exponential expansion in the information and communication technologies, the Council of Europe's project "Learning and teaching about the history of Europe in the 20th century" obviously had to go into the potential contributions of these technologies to history teaching. The symposium on "The challenges of the information and communication technologies facing history teaching" held in Andorra in March 1999 was aimed precisely at exploring the nature of these contributions and foreseeing any possible problems in respect of both the educational approach to and the presentation and orientation of the information now available to many people thanks to the said technologies.

The participants at the symposium addressed three major themes: the new information and communication technologies and history research; the use of the new information and communication technologies in history class; and the issue of source reliability. These themes are in line with two of the aims of the project: highlighting the new methodologies and educational approaches to teaching the history of Europe in the 20th century, and secondly learning to assess the quality of the information supplied by the new information and communication technologies. These themes and aims prompted intensive debates and discussions on a number of alternatives. During these discussions the participants consistently expressed their determination to identify the optimum learning conditions for young people to construct tomorrow's Europe in a spirit of mutual understanding and trust, using a tolerant and pluralist approach with a view to democratic citizenship.

The general report is aimed firstly at presenting the conclusions of all the work accomplished at the symposium, and secondly at elucidating a number of educational guidelines likely to optimise the impact of information and communication technologies on history teaching. Some sections of this report therefore endeavour to reflect as faithfully as possible the participants' comments during discussions, while others extrapolate from the

discussions to deal with educational issues vital to the endeavour to integrate these technologies into history classes.

Setting aside the conclusion, which outlines a number of facts meriting special attention in integrating information and communication technologies into history teaching in schools, the report breaks down into three major sections. The first stresses that these technologies cannot be ignored in history teaching because they have for some time now been an integral part of the socialisation process, they encourage a new relationship with knowledge and they are changing practices in history research itself, thus making it easier to transfer from one research paradigm to another. The second section describes the numerous services that information and communication technologies can provide for history classes, and gives a number of pointers to needs in terms of material resources in the classroom. It goes on to present two teaching situations to illustrate the services in question. The third section lists the pedagogical requirements for integrating such technologies into history teaching. The issue here is the reliability of documentary sources, how to structure learning situations in such a way as to prompt the construction of viable and functional knowledge in the pupils, the educational "force" of interdisciplinary learning situations and their importance in teaching, and the new roles to be played by history teachers in order to facilitate meaningful incorporation of information and communication technologies.

The inescapable fact of the information and communication technologies

The information and communication technologies[1] are now an integral part of the socialisation process. There are, it is true, glaring disparities between different countries and different regions within these countries. These disparities are deplorable, and we must do our utmost to eliminate them because they block the citizens' access to knowledge, information and media which would help them to participate even more actively and meaningfully in the life of their local, regional and national communities and contribute to harmonious interaction at the international level. However, despite the disparities it is apparent that an increasing number of people are now required to share their environment and interact with such technologies in their places of work and that many citizens have personally decided to incorporate certain technologies into their daily environment and their family and social lives.

In fact, the information and communication technologies are already an integral part of the day-to-day lives of many individuals, and with the increasing integration of these technologies into various social spheres and inter-personal communications all the indications are that this trend will continue. All these tendencies, and especially all the social milieus which are integrating the technologies, including families and pre-school child-care facilities, are such that the socialisation process necessarily includes the presence of and inputs from the information and communication technologies.

When a phenomenon becomes part of people's socialisation process, it inevitably becomes an inescapable concern for a number of social institutions. In the case of information and communication technologies, this characteristic

1. Hereinafter we shall merely refer to the information and communication technologies, rather than the "new" information and communication technologies. Since the adjective "new" implies this is a recent or hitherto unprecedented phenomenon, it would be unsuited to the technologies under discussion, as they have been around for several years now. Even though this sector is rapidly changing, such changes do not warrant a reference to "new" technologies. This decision is also based on the idea that for more and more children starting school these technologies are not new, and many of them are even very familiar. In the classroom, moreover, pupils have a much better command of some of the technologies than their teachers have.

is even more accentuated because these technologies perform important tasks or functions that support a number of individuals in their manual work (robotisation, automation, automated regulation, and so forth) or intellectual activities (modelling, simulation, graphic representation, translation, word processing, text correction), because they increase not only the resources but also the speed of communication (e-mail, electronic conferencing, electronic theme discussions, etc.) and help change the relations among individuals (such as written interaction, remote interaction, impersonal interaction) and between individuals and information/knowledge (document consultation, database consultation, thematic searching, videography and so forth). Any given society can react to such socialising forces by trying to prevent or limit their incursion into various fields of activity or relations, or else it can, on the contrary, do its utmost to make the phenomenon increasingly available and useful. All the indications are that present-day societies have adopted the latter approach to the information and communication technologies.

In schools

Whenever new phenomena gradually creep into the socialisation process in a community, schools find themselves forced to react to the new forces clamouring at their doors. Some of those involved in education regard new phenomena as something rather mundane, while others take the initiative of setting aside a special area in the school where they can join with young people in addressing the phenomenon. The information and communication technologies pose fundamental, inescapable questions for all those involved in any way in education. These technologies face teachers with particular challenges in terms of their educational practice and assessment of their pupils, and their endeavour to exert the maximum influence on their pupils' development and learning process. Whether teaching the national mother tongue, modern languages, mathematics, science or history, teachers must produce well-considered and discerning professional responses to these challenges. The challenge to teachers of information and communication technologies is particularly important because they give schoolchildren, like all other citizens, a new, pragmatic relationship with information and knowledge. After all, if these technologies can be used to find the right information at the right time and in the right place, schoolchildren are entitled to ask why they have to learn so much, given that they can easily pinpoint the requisite information and knowledge. They have the information "at their fingertips".

So teachers obviously cannot dismiss the information and communication technologies as a "passing fad" or "craze" which in a few years' time will have gone the way of many other facilities that have attempted to "invade"

schools, and become a secondary consideration. Nor can they conclude that these technologies will merely confirm current educational practice, adding some extra "glamour" to the formal dispensation of lessons in front of the class. The actual conclusion is that the information and communication technologies embody all the preconditions for the obsolescence of the "encyclopaedic" role (schoolmasters/mistresses possessing information and knowledge which they present to their pupils in the format "I tell you something, you memorise it and reproduce it in an exam and I give you a mark") that teachers have long fulfilled in schools.

Basically, because the information and communication technologies revolutionise the relationship with information and knowledge, because they embrace all the information and knowledge that "encyclopaedic" teachers transmit or would like to transmit to their pupils, and because they provide the means (if only by facilitating observation, listening, simulating and modelling) of directly supporting the pupils' teaching process, they throw down a formidable challenge to teachers and others involved in education. This is why they are an inescapable fact for schools. Nevertheless, everything points to the fact that these technologies will do more than just raise a number of superficial questions as to whether or not changes are needed. In the field of history teaching in particular, they will lead to significant changes in terms of educational practice and modes of assessment. These changes will result, *inter alia,* from the impact of the information and communication technologies on history research.

In history research

"Traditional history" is essentially narrative: it recounts facts and events and forges a number of chronological and causal links. However, the causal links established are univocal, that is only one historical interpretation is generally provided. This narrative approach to history, which is also quantitative, is based on documentary sources and, in line with its initial conception, is presented as objective history. The historian's view is that this approach to history cannot possibly represent the whole complexity of history facts or cover the multitude of possible perspectives on one and the same fact, event or situation. Furthermore, historians feel that in a mass society, which has developed and will further develop into a "segmented society", "narrative history" is highly unlikely to influence the citizen's values, ideologies and social and personal choices.

Several historians acknowledge that they now use a paradigm that is antithetical to narrative and quantitative history. This new paradigm concentrates on transverse or comparative history. In contrast to the

requirements of the narrative paradigm, it requires historians to make their hypotheses and postulates more explicit, define their concepts more rigorously, refine their research techniques, draw systematic spatiotemporal comparisons with a view to pinpointing the specific and the general, and set forth hypotheses that can be verified by evidence from the past and a variety of documentary sources. In history research, such an approach was extremely difficult to implement before the advent of the information and communication technologies because historians seldom had the requisite archives and documents to hand. Moreover, much of this material could only be consulted by a select group, or indeed one person only. The information and communication technologies are revolutionising the situation by offering rapid access to primary and secondary sources and the possibility of processing historic documentation (archives, databases, books, reviews, periodicals and works of reference) .

In a sense, the information and communication technologies are fostering a new history paradigm and enabling it to be updated on a daily basis. Historians now have computerised bibliographical catalogues, and more and more documentary sources are being placed on digital media, facilitating direct consultation by researchers. History researchers can also consult archives, reviews and books on the electronic network, as well as photographic and sound databases. The network has also enabled historians to set up various transnational groups. There are now over 200 such groups, comprising some 50 000 individuals worldwide. In history research, the information and communication technologies provide for a higher degree of methodological rigour and precision than was previously possible, and facilitate wider dissemination to a community of researchers and historians defending a variety of points of view and perspectives.

The information and communication technologies have not only lowered the cost to historians of consulting, publishing and distributing documents, but have also made it easy for them to incorporate sounds and images into their work. Thanks to digital publishing, inexpensive documents can be produced combining text, motion, image and sound. Such combined documents make historical research more rigorous (observations can be triangulated with a view to validating a given interpretation or hypothesis), increase the value of history research results and make history multidimensional. Moreover, the information and communication technologies encourage co-operation among researchers and historians. All these new avenues opened by technology indicate that the latter are affecting historical research at several levels. However, the changes are not only affecting history researchers and historians: there are also repercussions on the conception of history learning and teaching and therefore on history teachers themselves.

The information and communication technologies as applied to history teaching

As history teachers we can always doubt the relevance and efficiency of information and communication technologies as a teaching support; we can adopt or retain a "technophobic" attitude, as the case may be. Such an attitude is, nevertheless, dangerous, since these technologies are an integral part of the socialisation process for an increasing number of citizens, they can change the relationship between individuals, including schoolchildren, and information and knowledge, and they have prompted and sustained major transformations in the history research field. It would be better, in professional terms, for history teachers to reject technophobia and adopt a proactive attitude. This would enable them to explore and exploit, functionally and efficiently, the facilities provided by the information and communication technologies in order to foster their pupils' learning process. But that teachers must not only be proactive but also realise that most of their pupils already have access to a huge mass of historical data through these technologies, that the number of such children is gradually increasing and that the data in question can sometimes take the form of propaganda and ideological statements. Again, the information is often biased, if only by omission. There is a danger of pupils remaining unaware of this aspect if the school has not allowed them to develop the requisite critical faculties.

The participants at the symposium on "The challenges of the information and communication technologies facing history teaching" had not the least doubt about the importance, relevance and impact of these technologies in history teaching, particularly where the history of Europe in the 20th century is concerned. However, they wondered how best to integrate these technologies into history class, what pedagogical changes teachers need to make in order to use them effectively in fostering their pupils' learning process, and what learning situations are most conducive to young people's development from the angle of constructing

tomorrow's Europe in a spirit of mutual understanding and trust, using a tolerant, pluralist approach and with a view to democratic citizenship. They also stressed that teachers must adopt a special, perhaps unfamiliar, conception of history as a disciplinary field or an area of knowledge, and of history teaching as a set of professional activities aimed at influencing young people's learning processes and development, with their co-operation. The participants also pointed out that urgent action was needed to ensure that schoolchildren could gauge the reliability and validity of the documentary sources they consult through the information and communication technologies, and considered that history teachers had the primary responsibility for such action.

It is obvious from the symposium title, "The challenges of the information and communication technologies facing history teaching", that these technologies are challenging history teaching. While acknowledging the extent of these challenges, the participants did not devote all their presentations, discussions and reflections to describing all the ramifications of these challenges. Instead, they decided to begin by noting the crucial importance of the challenges of the information and communication technologies, and then to link them up with the criteria for enabling today's young people to construct tomorrow's Europe, the current orientations in historical research and the pedagogical constraints imposed by the actual dynamics of constructing knowledge and developing skills. In short, the symposium produced conclusions which go far beyond mere acknowledgement of the challenges created by the information and communication technologies. They point up a number of choices that must be made and orientations that must be adopted if young people are to be able to learn the history of Europe in the 20th century by means of a European (but not a standardised) interpretation and understanding of this history.

Some of the services provided by the information and communication technologies

The information and communication technologies give pupils and history researchers alike on-line access to archives, original documentary sources and various interpretations of these archives and sources. They enable pupils to consult compact laser disks and even to contact experts on particular issues or themes. All of which adds up to a vital storehouse of

information and data conducive to history learning and teaching. Many of those involved in education realise that thanks to the information and communication technologies pupils are more likely to grasp the "veracity" of facts, situations and events and interpret them properly and rigorously, with their teacher's help, because they can obtain several angles on any given fact, situation or event: they have access to a plural reading of historical phenomena.

Teachers already have two major categories of technological resources to support meaningful history learning in their pupils: on-line tools (for example the Internet), and offline tools (for example compact laser disks). They can also combine online and offline facilities to enable pupils to consult differentiated documentary sources. As for history researchers and historians, these tools are extremely useful for schoolchildren in understanding history because they combine text, image, sound and motion. Some educationalists consider that compact laser disks (and this is perhaps their unique feature) can impress on pupils the whole extent of a specific field or issue and consequently enable them to grasp that a given phenomenon, such as a political decision on refugees, is not peculiar to any one era. It should, however, be borne in mind that the information and communication technologies are a resource to support history learning and teaching and therefore cannot eliminate the need for pupils to consult written documents (books, articles, archives and the press). In fact, it would be detrimental to history learning if these technologies were to become an end in themselves. Nor, of course, can they replace the teacher.

It is fair to say that information and communication technologies (both on- and off-line) provide an invaluable databank for history students. However, these technologies also provide classrooms with communication and production resources that can really energise the learning process. Pupils can co-operate at a distance in history projects and historical issues and themes, transcending the boundaries of region, country, or even continent. As mentioned above, they can also communicate with experts in order to gain a better grasp of a particular phenomenon or of the meaning and scope of a given hypothesis. In fact, there is nothing to stop them co-operating with a research team on specific topics. The information and communication technologies also give pupils the necessary support for producing projects combining text, image, sound and motion. This technological support enables

schoolchildren to express their level of comprehension and also to help disseminate different or indeed completely new viewpoints.

The requisite resources

Broadly speaking, no one, apart from the odd technophobe, disputes the fact that information and communication technologies provide an enormous variety of services for teaching and learning. However, many problems do emerge in connection with the educational environment required for successful integration of these technologies into the classroom. There are even worse problems with the amenities the schools have to purchase in order to make the classroom conducive to optimum exploitation of the technological potential. The participants at the symposium laid great emphasis on the shortage of not only suitable computers but also compact laser disks and connections to outside networks. Where material resources are concerned, it must also be acknowledged that politicians and educationalists should pay particular attention to the computer hardware owned by the teachers themselves. Teachers are in the front line of this transformation in the classroom, and research has shown that they are unlikely to become actively committed to change unless they themselves possess the facilities they are supposed to use interactively with their pupils in the classroom.

The technological resources must be located in the classroom rather than in a separate multifunctional area of the school or a computer laboratory. This criterion is vital if we wish to ensure, firstly, that teachers and pupils make regular use of the information and communication technologies in history class, and secondly that they use them as a means to an end rather than an end in themselves. The technologies must be available when needed by the pupils for the particular learning action they are engaged in and the research they need to conduct. Using the technologies for a set period every week or in cycles of a few days has proved completely pointless. This might make us wonder about the efficiency of the information and communication technologies in schools and the impact of such-and-such a political or administrative decision on the pupils' learning process. It is vital to ensure that adequate number of suitable computers are permanently available in history class and that the machines are powerful enough for any users to consult both compact laser disks and Internet databases and documentary sources. It is also important for the computers and software to be powerful enough for

pupils to produce and disseminate documents incorporating text, image, sound and motion.

Moreover, compact laser disks compatible with the learning targets should be available to history teachers and pupils, as they provide not only textual information but also images and sounds, ideally consisting of videographic sequences. Special care must be taken with the compact laser disks currently available on the teaching materials market because some of them are just electronic books. The information and communication technologies can contribute very little through such materials, which may even be detrimental to the learning process if low-power computers are also used. Experience in education has shown that if the software merely reproduces lines of text as in books and archives and the computers are slow and lacking in power, the information and communication technologies cannot be successfully integrated.

Where other necessary resources are concerned, a list of compact laser disks and websites fulfilling high-quality criteria in terms of both content and form should be established and regularly updated. This would provide history teachers with reliable references on a multitude of historical phenomena. The Council of Europe could undertake to establish and publish such a list, and might even create its own search engine to help rationalise and expedite information retrieval from the Internet. Such action by the Council of Europe would save pupils or teachers wasting time with random searches or attempts to sort through masses of data to find the really relevant information.

A number of different viewpoints

The narrative paradigm of "traditional history" stressed the chronology of facts, events and situations and prompted historians to establish causal links based on this chronology. As a general rule, this paradigm gave rise to a single, univocal interpretation of the historic facts, situations and events under consideration. In the classroom, history teachers followed the same univocal line of thinking, because it was impossible to compare different viewpoints on a given historical phenomenon with the documents available. With the advent of information and communication technologies and under the concurrent influence of the new paradigm for historical research, pupils, teachers, history researchers and historians

alike now have access to original documentary sources and to a variety of interpretations of and hypotheses on any given phenomenon. The information and communication technologies give pupils and teachers a pluralist vision of one and the same historical phenomenon.

In history classes where the information and communication technologies have been successfully integrated there can be no "one" history: there are several histories. There are several histories in the sense that the pupils, with the pedagogical support of the teacher, consider different points of view or angles in understanding and interpreting historical facts, situations and events. Taking the example of a military invasion, ideally the pupils should be presented with the viewpoints of the invaders, the invaded, the minorities, women, the elderly, the young people, the victors, the defeated, and so forth. In history class, this apprehension of different points of view and realisation of the intentions, perceptions and reactions of each of these groups involved in an event can prompt pupils to eschew the "absolute" or the "univocal" and instead draw relativised conclusions, because they have interpreted a given historical phenomenon or series of historical phenomena in a pluralist manner. Before the advent of the information and communication technologies, it was extremely difficult to sustain such an educational orientation and objective in history class on a day-to-day basis.

As we have already mentioned with reference to historical research, the information and communication technologies facilitate the combined use of text, image, sound and motion. This combination increases, *per se*, the probability of users being able to check the veracity of facts, situations or events, further supported by access to original documentary sources and various interpretations. This enables history classes where the information and communication technologies have been successfully integrated to move on from the usual pre-technology approach to history, that is a history without words, sound, image and motion, to multi-sensory and therefore multi-dimensional history. Some educationalists stress that integrating the information and communication technologies into the classroom encourages three-dimensional history teaching, or an approach based on three-dimensional documents.

It is indisputable that the main advantage of using information and communication technologies in history class is that they facilitate and encourage a pluralist interpretation of any given phenomenon. However,

there are two more advantages: firstly they enable pupils to interpret a phenomenon in both a transverse and a transnational manner and therefore to realise its complexity, persistence and consequence, and secondly they concatenate facts, situations or events in order to illustrate the causal link and elucidate the factors leading to extension, conservation and reduction, or indeed extinction. In learning and teaching about the history of Europe in the 20th century, the information and communication technologies consequently give pupils access to a European interpretation of the history of their region, country and continent, without imposing a standardised vision. Furthermore, they give teachers multipurpose resources to be used as targeted support for pupils' learning processes and as a concrete contribution to constructing tomorrow's Europe.

Two examples of learning situations

The participants at the symposium were presented with a number of learning situations established by European history teachers. We shall describe two of these situations here as examples of how information and communication technologies can be used in history class: one concerns a study on the transition from emigration to immigration in Andorran society, "20th-century Andorra: from emigration to immigration", and the other the development of the White Power movement worldwide. These two examples show that using information and communication technologies encourages, and perhaps creates, interdisciplinary learning scenarios. In the first of these two learning situations, the pupils concurrently pursued learning targets relating to history, economics, languages and computing, while in the second the targets involved history, a second language (English) and literature.

The study of the transition from emigration to immigration in Andorran society resulted in the above-mentioned document. This document contains many illustrations and graphs, carefully selected to represent the statistical data presented. It is extremely well-produced, especially considering the ages of the children concerned. The learning situation required them to conduct research with a view to developing a comprehensive and critical approach to changing trends in migration flows in the Principality of Andorra during the 20th century. Such research was highly reliant, *inter alia*, because in the course of this century Andorra has changed from being a society which periodically

expelled sections of its population to being a host country which has, for a number of decades, been taking in many immigrants.

In conducting their research, the pupils used information and communication technologies (the Internet and compact laser disks, that is on-line and off-line facilities) to secure information on the choices and attitudes of Andorran society in the field of emigration and immigration, extending this investigation to the whole of Europe. They also interviewed Andorran citizens, and used such technological facilities as Microsoft Excel, Microsoft Word, Microsoft Publisher, Microsoft Photo Editor and Paint Shop Pro to produce their project.

The pupils addressed four themes under their research project: *(1)* the precarious balance between population and resources in traditional Andorran society; *(2)* the significance of mental uprooting for emigrants; *(3)* the significance of integration of immigrants into a new country; *(4)* dynamic relations between Andorra's new economic structure and its new demographic structure. In addition to the aforementioned objective, the project was aimed at explaining the dynamic relations between various economic situations and demographic changes to Andorran schoolchildren, to enable them to develop attitudes of tolerance and solidarity towards immigrants attempting to integrate into their country.

The pupils' main aim in the second learning situation, namely a study on the White Power movement worldwide, was to grasp the issues raised by this movement, its ideology and the means used by its supporters to promote their ideas. The learning situation required the pupils to use information and communication technologies precisely because the White Power movement runs a multitude of Internet sites. This learning situation (and this is very important for all history teaching, including that of 20th-century Europe) required the pupils to address extremely controversial phenomena or subjects. This in turn meant that the history teacher had to provide the pupils with the requisite tools for rigorous detection and analysis of bias, propaganda, subversion and omissions.

As in the case of the transition from emigration to immigration in Andorran society, in the second learning situation the pupils had to conduct research to glean the requisite information for attaining the aims set. This research relied heavily on the information and

communication technologies. In studying the White Power movement the pupils had to answer six questions: *(1)* What is the nature of the White Power movement worldwide? *(2)* What is the White Power movement's ideology? *(3)* Why is music so important for individuals wishing to disseminate ideological propaganda? *(4)* What is the general message of the songs linked to the White Power movement? *(5)* What are the relations between certain Swedish musical groups and the White Power movement and what attitude do record companies adopt to them? *(6)* How intensively, and for what purposes, do groups linked to the White Power movement use the Internet? The pupils learnt a great deal from studying this subject, which in particular helped them develop very sharp critical faculties *vis-à-vis* documentary sources incorporating both explicit and implicit, and indeed concealed intentions. This learning situation basically showed the pupils how to dismantle propaganda and pinpoint the dynamics and mechanisms underlying it.

Even though both the aforementioned learning situations necessitated recourse to the information and communication technologies, it should be remembered that this did not dispense the pupils from consulting written documents (reviews, articles, books and archives) available in the classroom and school library, or from interacting with other individuals. The information and communication technologies, conceived as an aid to learning and teaching and not as an end in themselves, complement the resources already available in the classroom and the school. At the same time the pupils could never have conducted such complete, rigorous and detailed research in these two learning situations without access to these technologies. But the latter could never replace the history teacher either. In fact, so much information and knowledge is becoming available to schoolchildren and there is so much scope for manipulating this information that the teacher will remain as the anchorperson of the history class, but also a professional whose pedagogical practices are undergoing considerable change.

The pedagogical requirements of the information and communication technologies in history class

Given that the information and communication technologies are part of the socialisation process, that they have a major influence on research conducted in the historical field and that they give all categories of citizens access to original documentary resources and various interpretations of and hypotheses on different historical phenomena, they are gradually becoming more and more integrated into history classes. It is increasingly obvious that history teachers cannot curb their integration and perpetuate the technophobic attitude. They will at the very least have to take account of the possibilities that these technologies provide for history teaching.

In addition to the above-mentioned reasons why history teachers should pay close attention to integrating the information and communication technologies into their classes, two further factors militate for such an approach: the fact that some of the historical phenomena dealt with in class are presented, described and discussed on on-line sites and off-line documents and that the persons consulting such sites and documents sometimes discover biased, fragmented or falsified information or information presented out of context. Moreover, given that the information and communication technologies, especially the on-line resources, contain much more information than is possible in school textbooks and can regularly update it (which is impossible in school materials or hard-copy documents) and give access to sources which pupils cannot consult anywhere else, there really is no escaping the need to integrate these technologies into history classes.

Nevertheless, to history teachers integrating them into the classroom is no easy professional transition, where educational and evaluative practice is concerned. Some educationalists even consider it more as

breaking with the past than continuing towards the future. This idea of a break stems mainly from the fact that the encyclopaedic role (the knowledge transmission role) formerly fulfilled by history teachers in interaction with their pupils can often be very efficiently discharged by the information and communication technologies themselves. The formal dispensation of lessons in front of the class loses much of its point, as do the exclusively "vertical" teaching practices with information flowing from the master/mistress to his/her pupils. Moreover, since most of the information and knowledge required for history teaching are constantly available through the information and communication technologies, history teachers are facing another break, that is changing from a type of teaching that considers information and knowledge as objects to be observed, analysed and memorised by the pupils to a type which regards this information and knowledge as "resources" or "tools" for understanding historical facts, situations, phenomena and issues. However, teachers must systematically structure much of this information and knowledge if their pupils are to construct valid, functional, in-depth historical knowledge.

How can we ensure that all these changes succeed, and above all, what basic questions do we have to answer in order to ensure that they influence the pupils' learning process and that teachers, as professionals, can effect them not only efficiently but also highly harmoniously and confidently? The information and communication technologies, particularly on-line resources, raise the inescapable problem of documentary source reliability for pupils. Teachers must solve this problem before initiating pedagogical changes in line with the resources provided by these technologies. Subsequently, they must address the following pedagogical questions: *(1)* how can we construct historical knowledge and develop skills in this field by considering information and knowledge as resources or tools rather than as static, lifeless "objects"? *(2)* how interdisciplinary must the learning situations be? and *(3)* what roles must teachers take on *vis-à-vis* the resources provided by information and communication technologies, in accordance with the idea that historical information and knowledge are resources or tools for understanding?

The source reliability issue

Before the advent of and recent boom in the information and communication technologies, history teachers would choose the basic

educational material, usually a textbook, either alone or together with a few colleagues, or else they would select specific chapters in books, articles from reviews and a number of other documentary sources as the main reference documents for their pupils in class. Although teachers did have to consider the question of source reliability in selecting the documents, the answer was easy to find and, above all, the reliability problem was solved without the pupils' knowledge or help. The latter were not at all involved in the choice of materials, and in any case, with "encyclopaedic teachers" their involvement was unnecessary. However, because pupils have always been excluded from the teachers' decision-making on the reliability of documentary sources, most of them have never had a chance to develop their critical faculties at school *vis-à-vis* various written and oral opinions on any given historical fact, situation or event. It should also be noted that the documentary sources selected by teachers did not always contain all the necessary information for the pupils to understand the complexity and dynamics of a given historical phenomenon, *inter alia*, because some facts had been omitted or concealed or, very often, only one viewpoint was presented.

By enabling history students to consult several documentary sources, particularly, the information and communication technologies are completely transforming the situation. Teachers cannot possibly foresee, before their pupils go into such-and-such a site, the degree of reliability of all the information and knowledge they might consult. Even if they tried to check, the frequent changes to on-line sites would make this a colossal, even Herculean task. However, this does not prevent teachers from assessing a number of sites and laser disks for compatibility with particular targets being pursued in history class and recommending them to pupils. However, the latter, for example when surfing the Internet, will always be able to discover new sites which they consider useful for their particular learning situation but which have not yet been assessed by the teacher.

History teachers therefore have no choice but to implement appropriate learning situations with a view to ensuring not only that their pupils develop the criteria for critical assessment of documentary sources (all documentary sources regardless of their nature and aims) that they can consult through the information and communication technologies, but also that they operationally integrate these criteria when consulting the sources. In fact, these criteria are few in number, but if they are to be

integrated operationally into the pupils' cognitive process the teachers must start by sitting down with the pupils and constructing a critical assessment framework. This framework consists of four basic questions which must be the pupils' constant guide: *(1)* what information does this documentary source provide and what information does it omit or conceal? *(2)* do any well-known facts contradict the information as presented? *(3)* where does the information provided by this documentary source come from? *(4)* what are the intentions of the designers or authors of this documentary source? This critical assessment framework should be used to guide the consultation of the various documentary sources. It to some extent requires students to do detective work, tracking down erroneous, biased, falsified or omitted information.

Having developed this critical assessment framework with their pupils and ensured that they fully grasp its relevance and importance, teachers must clearly explain the criteria whereby their students can pinpoint the degree of reliability of specific documentary sources they wish to consult in their history learning operations. These criteria help operationalise the critical assessment framework, and are aimed at enabling pupils to ascertain immediately and independently which sources are biased, omit certain facts or are coloured by a specific ideology. Educationalists who have considered these problems propose five criteria for assessing the reliability of a given documentary source: *(1)* the author or designer; *(2)* the author's or designer's obvious aim; *(3)* the date of production and frequency of updating; *(4)* any references in support of the information presented; *(5)* the readability and clarity of the site, including text, graphic illustrations and images.

Teachers must create enough learning situations for their pupils to develop optimum command of these criteria for assessing documentary source reliability. In such situations, the teachers should explain the fact, which often eludes young people, that the aesthetic qualities of a given site or the sophistication of its presentation do not necessarily indicate that the information it contains is reliable. For each criterion, the teachers must stress a number of vital aspects. Where the first criterion is concerned, pupils must ascertain whether the document source is managed by an institution, an organisation or an individual. In all cases they must be aware of the political or other leanings of those responsible for the source in question, and the author's or designer's name should be clearly mentioned. In the case of the second criterion, pupils must

establish whether the author or designer has any obvious intention in mind. If there is an obvious aim, they must assess the coherency of the information *vis-à-vis* the aim and check whether the information is organised and presented, or partly concealed, in accordance with any "hidden agenda". If the aim is not obvious, pupils still have to be on their guard and, before declaring the source credible, must try to identify the aim pursued by the author or designer. This is certainly the most demanding criterion for students because it requires them to differentiate between facts and opinions, observations and interpretations, important data and secondary or trivial data.

Where the third criterion is concerned, the pupils must carefully check when the documentary source that they plan to consult was set up. They must develop some degree of wariness about sites which do not state their dates of birth and frequency of updating. Frequent and regularly updating has become customary, especially in on-line resources (in fact this is one of the main strengths of information and communication technologies in the history field as compared with written documents). Therefore, pupils must ascertain firstly whether such updating includes fresh data or new viewpoints, and secondly whether such data and viewpoints are still consistent with the author's or designer's aims.

The extremely important fourth criteria requires pupils to carefully consider the references on which the information presented in the documentary source is based. The main questions include the following: *(1)* does the information take account of several references? *(2)* are the references used reliable? *(3)* are the most common references in the field taken into consideration? *(4)* can users of the documentary source consult the references used? Lastly, with regard to the fifth criterion (the readability and clarity of the site, including text, graphic illustrations and images), it must be realised that unlike textbooks or documents selected by history teachers for their pupils, the documentary sources consulted through information and communication technologies are not necessarily tailored to the pupils' reading skills. Some students might find a given text hard to understand because of its structural, semantic and lexical structure. Since readers obviously cannot decide on the reliability of a given documentary source if they cannot understand all the information it provides, the pupils must assess the readability of the text as compared with their own reading skills. In such assessment they must also take account of

the clarity of images and graphic representations, as these two modes of communication can transmit important messages.

Constructing viable historical knowledge

The information and communication technologies raise novel and crucial problems for history teachers including that of assessing the reliability of the information contained in documentary sources, particularly those that are on-line. However, these technologies do not only present problems to history teachers, they also provide them with an opportunity: *(1)* to present their pupils with various viewpoints on a given historical fact, situation or event; *(2)* to bring controversial aspects out into the open, possibly of illustrating them with documents; *(3)* to demonstrate the omissions which prevent people from developing a differentiated comprehension of certain phenomena; *(4)* to discuss conflicting data honestly. Nevertheless, these new avenues for history classes require teachers to move on from the encyclopaedic or knowledge transmission approach to designing and implementing learning situations facilitating meaningful, "empowered" use of the facilities provided by the information and communication technologies. We might justifiably conclude that these technologies impel history teachers to abandon an approach to teaching based solely on narrative or quantitative history.

The essentially narrative or quantitative conception of history induces teachers to concentrate on the chronology of historical phenomena and a minimal number of concomitant, or sometimes causal links. This enables pupils to integrate and memorise various sequences of historical facts, situations or events and their spatiotemporal context, but does not encourage viable learning, or, to put it another way, the construction of viable knowledge. This way of learning does not equip the pupils to understand the complexity of the historical phenomena under consideration, grasp their dynamics and establish transverse spatiotemporal relations with other phenomena of the same kind or which are impelled by the same dynamics.

Most participants at the symposium considered that the construction of viable historical knowledge, that is knowledge that increases the pupils' "power" of understanding of the history of Europe and their "power" of understanding and action *vis-à-vis* construction of tomorrow's

Europe, must be supported and triggered by learning situations that stress a research and problem-solving approach. Basically, teachers must create learning situations which target the learning at specific problems ("problematise" it) and necessitate a very active commitment on the part of the pupils to searching for information and knowledge (teachers are not exclusively knowledge transmitters) and linking up this information and knowledge (teachers acting as guides and mediators).

The two examples presented above (transition from emigration to immigration in Andorran society and the White Power movement worldwide) clearly illustrate how learning processes can be targeted at specific problems for the pupils. In studying the transition from emigration to immigration in Andorran society, the problem was primarily to comprehend and explain the dynamic relations between various economic situations and demographic changes. This meant that the pupils had to take account of historical information and knowledge in order to gain a proper grasp of the relations in question and be able to explain them. Furthermore, such information and knowledge can be transformed into in-depth knowledge that is viable because it is strongly contextualised around a specific issue, in a context that requires the pupils to be highly committed and to process the information in question. The basic proposition is that items of knowledge are tools to improve comprehension and rationalise action. To a large extent, the issue brings the knowledge alive while it is actually being constructed. The study of the White Power movement worldwide had these aspects of researching and resolving problems and issues, and required a very high degree of commitment from the pupils, which was also the case for the project on the transition from emigration to immigration in Andorran society.

Targeting learning processes at specific problems and considering the historical information and knowledge which pupils are invited to tackle actively in the learning situations as tools and resources promoting understanding and action do not mean that it is sufficient in history class to consult the pieces of information and knowledge in question without constructing rigorous in-depth knowledge. On the contrary, this is an educational approach aimed at strongly influencing the very process of knowledge construction by stressing the targets of the teaching process and creating situations in which the pupils must research and resolve problems and issues. Specifically targeting the teaching is directly

conducive to "problematising" the learning process. However, in this kind of educational approach special attention must be paid to structuring the knowledge with the pupils. The teachers must make visible to their students those aspects which remain invisible to them while they are researching and solving the initial problem.

Basically, in order to implement an educational approach whereby pupils research and resolve issues as a means of supporting their history learning processes, teachers must create a permanent research context in the classroom. The following model might be used for this approach: *(1)* establishing the problem or problem situation; *(2)* pooling the knowledge already acquired on the problem or problem situation and explaining opinions and hypotheses; *(3)* revising the problem or problem situation in the light of the pupils' prior knowledge, opinions and hypotheses; *(4)* organising the research action and distributing the various tasks and functions; *(5)* consulting a variety of human and material resources; *(6)* presenting the conclusions on the initial problem or problem situation; *(7)* structuring the new knowledge. This approach is then outlined in order to clarify the steps in a learning situation aimed at influencing the pupils' construction of viable knowledge items.

We shall illustrate this approach with an issue which arose during the second world war, namely the dropping of the atomic bomb on Hiroshima. One possible hypothesis is that this event brought about not only the end of the second world war but also the beginning of the cold war, which was to persist for several decades. Such an issue gives rise to a demanding and complex learning situation, and forces the pupils to take account of a multitude of facts and events up- and downstream of the historical phenomenon in question. This means that they must consider several historical realities before they can draw the conclusions validating or invalidating the initial working hypothesis. Moreover, it should be noted that in this learning situation the teaching process is strongly targeted (the aim being to demonstrate the probable truth of a hypothesis and provide arguments supporting the conclusions), and the completed learning process comprises a high degree of viability (explaining the historical facts and events and necessitating the creation of many transverse and vertical functional links). The learning situations arising out of the narrative and quantitative paradigm of history lack these features, and pupils often leave their history class with mere "static" knowledge of chronologies.

During the first stage (establishing the problem or problem situation), the teachers present the problem or problem situation to their pupils, carefully noting their level of motivation because this is the main factor in ensuring active, sustained commitment to the learning process. They concentrate in particular on demonstrating the value of the learning target. Right from the outset the teachers endeavour to influence the probable viability of the knowledge to be constructed by their pupils. At this stage they clarify the main issues emerging from the problem or problem situation and the criteria for resolving it. They also set out the hypothesis to be partly or fully validated or invalidated by the pupils, and stress the idea that they must imitate history researchers or historians by basing their conclusions on a wide variety of documentary resources and linking up conflicting data and differing viewpoints. During this first phase the teacher's primary aim is to create the context for the learning situation and place the pupils in a situation of "cognitive imbalance". This enables them to initiate a process leading to a new cognitive balance thanks to the learning processes completed or the items of in-depth knowledge constructed.

During the second stage (pooling of knowledge already acquired on the problem or problem situation and explaining opinions and hypotheses) the teacher can create a special educational environment whereby the pupils can initially set out all the knowledge they possess at that particular moment on the problem or problem situation in question. The first advantage of taking account of prior knowledge in a new learning situation is that the new learning processes can be linked up to this knowledge. The second is that the teacher can invest in continuing and extending prior learning processes instead of reiterating them or encouraging fragmented learning, as often happens in the formal dispensation of lessons in front of the class. This stage also requires the teacher initially to invite the pupils to honestly state their opinions and hypotheses on the problem or problem situation. On completion of this phase all the class partners, namely the pupils and the teacher, can share the knowledge and viewpoints of the whole class (including opinions and hypotheses) in relation to the factor triggering the learning situation. Once this information has been obtained, the problem or problem situation targeted during the first stage may have to be revised. This gives rise to the third stage in the educational action, namely the revision of the problem or problem situation in the light of the students' existing knowledge, opinions and hypotheses. Such revision can only be

meaningful if it is based on students' previous knowledge, opinions and hypotheses and if they fully grasp the issues involved in such pedagogical dynamics.

The fourth stage (organising the research action and distributing the various tasks and functions) involves organising the work of both the pupils and the teacher. In an educational approach stressing research and problem-solving in order to support the pupils' learning process, the teacher must pay enormous attention to what is conventionally called "class management" and working group management. The pupils must co-operate, that is they must join together in consulting numerous documentary sources, extracting the important information and differentiating between it and secondary data, discussing conflicting data and differing viewpoints, constructing knowledge individually and collectively and producing a final document.

Furthermore, the complexity of the problem or problem situation often requires each group of pupils to deal with a number of specific aspects, which means that sharing the discussions and conclusions of all the working groups is the only way for all the class members, as a community of learners, to finally resolve the problem or problem situation. In such a learning context, before the research work actually begins, the working groups must have a very clear idea of the tasks they are to perform and each pupil must know his/her precise role and function within his/her working group and the class as a whole. It is also important for the working groups and the students to co-operate with the teacher in deciding, at this stage, which documentary sources to consult, which individuals to contact, when each group will report to the whole class on progress in its research work and what kind of final document will be produced. This fourth stage basically involves work organisation and working group management.

The fifth stage in the project (consulting a variety of human material resources) can vary enormously in length depending on the complexity of the problem or problem situation, unlike the previous stages where the time is generally strictly limited. With this stage the pupils enter an intense research period, with the teacher's support, which varies greatly in scope depending on how much knowledge and know-how they have already acquired. In the case of the atomic bomb dropped on Hiroshima and the hypothesis that this event marked the end of the second world

war and the beginning of the cold war, they may decide to consult documentary sources and archives through the information and communication technologies (on-line and off-line facilities) and written documents on this period in history, communicate with selected historians by e-mail, check the content of electronic conferences, organise interviews with individuals on their knowledge of this period and their interpretation of the historical facts, and so forth. All these activities provide the pupils with a mass of information that will enable them gradually to build up their argued position on the initial hypothesis. However, in this context the teacher must take all the requisite action to ensure that the pupils can distinguish the essential from the secondary, pinpoint omissions or falsifications, detect bias and manage conflicting data. The teacher's roles during this stage are decisive for the success of the learning situation and its impact on the pupils' progress and development. It is during the fifth stage that teachers make their real contribution to the development of the pupils' critical faculties *vis-à-vis* documentary source reliability.

The sixth phase (presenting the conclusions on the initial problem or problem situation) requires each group of pupils to produce a document reporting on its conclusions and setting out the facts and arguments in support of the latter. Ideally, given the facilities now provided by the information and communication technologies, this document should contain text, image and sound. It might also, where appropriate, incorporate some video sequences. This document must be formally presented to the whole class and made available to students in the other working groups. This stage is crucial for the research or problem-solving process because it enables the conclusions reached by different groups dealing with specific aspects of the same issue to be shared, leads to discussion of differing viewpoints and provides the bases on which the class, as a community of learners, can attempt to secure a common general conclusion on the problem or problem situation that triggered the learning process. However, the presentation of these conclusions is not the end of the learning situation. On the contrary, it sets the scene for the collective resolution of the problem or problem situation by the class. From this angle the pupils may be required to consult further documentary sources or revise a number of their interpretations. Broadly speaking, the work collectively performed by all the groups gives rise to a single production which may be presented to a variety of audiences. Thanks to the information and communication technologies the pupils

can "publish" on the Internet and thus submit their conclusions and hypotheses to the general public for critical analysis.

If the last stage (structuring the new knowledge) is evaded or neglected in the learning situations as contextualised within a given problem or problem situation, the knowledge built up by the pupils will be extremely disappointing in both qualitative and quantitative terms. During this phase of systematic knowledge construction, which is sometimes referred to as "debriefing", the teacher undertakes first of all to make visible those aspects which have remained invisible to the pupils during the research or problem-solving process. In such processes the pupils refer to a huge mass of information and knowledge, but they are unaware of the plurality of the information and knowledge they are using. It is therefore vital to make them aware of this whole complex of information and knowledge, and such awareness is only possible if the teacher intervenes systematically and rigorously. Once this awareness has been achieved, since the knowledge is constructed on the basis of the aforementioned information and such construction necessitates a kind of "cognitive" translation of the information and knowledge in question, the teacher must provide intensive support for the pupils in this process. To some extent he/she is contributing to the pupils' knowledge construction process by formalising the knowledge items and specifying their characteristics, their "power" of explanation and their limits. In so doing the teacher is pursuing a process of decontextualisation (the previous stages in the educational action involved contextualisation). He/she is thus giving the pupils an opportunity to perceive the information and knowledge outside any context, and specifically outside the context initially required for their construction.

In the case of the perception of the atomic bomb dropped on Hiroshima as an event which both ended the second world war and created the conditions for the development of the cold war, whereby the teacher is pursuing specific targets for learning about the history of the 20th century or the history of Europe in the 20th century, he/she must create the requisite educational environment to focus on and systematise specific items of knowledge with his/her pupils. The knowledge-structuring phase provides the teacher with such an educational environment. When structuring the knowledge the teacher must also bear in mind that by organising items of knowledge hierarchically and indexing them to actual

situations he/she can greatly augment their viability and functionality. It is vital for the teacher to get together with the pupils to organise their new knowledge and forge links between the latter and their prior knowledge, by creating, *inter alia*, as many connections as possible with historical situations on which the new information sheds light.

As we can see, targeting teaching and learning at specific problems or problem situations ("problematisation") with a view to strongly influencing the construction of viable and functional knowledge on the part of pupils forces teachers to make major changes to their pedagogical practices, in terms of both lesson planning and learning situation management. Such targeting requires them to take on new professional roles. Before dealing with these new roles, however, we must go into the generally interdisciplinary nature of the learning processes prompted by "problematisation".

The interdisciplinary approach to problems or problem situations

School curricula, that is the learning process which the policy-makers decide are essential for pupils during their formal education, are very strictly divided up by discipline. Learning is confined within each discipline: specific learning processes in the mother tongue, specific learning processes in second languages, specific learning processes in geography, specific learning process in mathematics, and so forth. Specific educational material is frequently available for each discipline, which usually dissuades teachers from crossing the disciplinary boundaries with their pupils. Such strict separation of disciplines is a major obstacle to the transferability of learning processes completed by pupils at school and prevents both teachers and pupils from making such processes meaningful. In view of these limitations on the school's influence on pupils' development, some educationalists have challenged this fragmentation of learning and teaching and attempted to secure greater interaction between disciplines, making teaching inter- or trans-disciplinary. It must nonetheless be acknowledged that information and communication technologies are a major factor in forging transverse links crossing the boundaries between disciplines, and that learning processes originating from problems or problem situations are a move in the same direction.

In the case of the atomic bomb dropped on Hiroshima and the hypothesis that this historical event marked the beginning of the cold

war even though it was primarily the end of the second world war, history, as a discipline and field of knowledge, provides us with extensive understanding of the phenomenon in question but does not provide all the necessary data for exhaustive, in-depth comprehension of the event. Only by taking account of information and data from disciplines such as geography, economics and sociology, to name a few, and linking them up with historical interpretations can we guarantee the minimum bases for full understanding of all the ramifications of the event. If teachers give priority to learning processes contextualised around specific problems or problems situations and target their teaching in such a way that the knowledge constructed by their pupils is both viable and functional, it is very difficult for them to work in a "monodisciplinary" school context, and so their pedagogical conception drives them towards the interdisciplinary approach. This approach is highly conducive to targeting specific problems and problem situations.

Positing that the targeting by teachers of problems and problem situations as factors triggering learning processes is necessarily interdisciplinary, we might simply conclude that "problematisation" necessitates the interdisciplinary approach. However, interdisciplinarity is not a mere consequence or characteristic of problems or problem situations: it is also one way of taking account of "living", real, genuine situations at school, within the very process of knowledge construction by pupils. It is a prime means of ensuring that pupils can assign real meaning to school learning processes and that the knowledge they construct is viable and functional.

For example, in strictly subject-based educational activities, the Andorran schoolchildren could have studied migrations in Andorran society in the 20th century in history class, economic changes in Andorran society in the 20th century in economics class, and the geographical and geopolitical situation of the Principality of Andorra in the 20th century in geography class, thus learning fragmented lessons confined within each of these disciplines. For most of the pupils involved, because these learning processes would not have been "problematised", they would not have been very viable and, like most school lessons, would very probably have faded into oblivion after the final assessment. In the learning situation described in the preceding pages the pupils implemented an interdisciplinary approach which

forced them to consider, within the same research project or problem situation, a huge mass of historical, economic and political information and knowledge. Furthermore, this information and knowledge from a variety of disciplines improved their understanding of certain dynamic relations between various economic situations and demographic changes, enabling them to explain the transformations that have taken place in Andorran society. The learning processes they have completed and the knowledge they have constructed explain real-life situations, and therefore are extremely viable. Such a degree of viability is difficult to obtain in "monodisciplinary" learning situations, which reduce the complexity of the real-life situations and issues and confine them within the boundaries of the individual disciplines.

In addition to all the foregoing arguments in favour of interdisciplinary learning situations and the pedagogical "strength" of such an approach, it must be seen that the information and communication technologies now provide resources which were unavailable to teachers and pupils until very recently. Thanks to hyperlinks and the facility for thematic searching via on-line and off-line resources, users can ascertain viewpoints from a variety of disciplines and schools of thought on any given phenomenon, whether historical or not. Such versatility, which is now within the reach of teachers and students through the intermediary of the information and communication technologies, favours the planning and management of interdisciplinary learning situations because it highlights the specific but complementary contribution of each of the various disciplines.

The teacher's roles

Several factors are currently driving schools to review their aims and orientations and those involved in education, including teachers, to rethink their practices and roles in interaction with their pupils. The high level of educational underachievement and school drop-out rates, the large number of children having to repeat a year, especially in primary school, and the great many pupils with learning difficulties and youngsters who are still functionally illiterate on leaving school are challenging the school's ability to promote the development of all young people during their period of compulsory education. It is true that young people have changed in personal terms over the last few years, but this cannot alone explain the fact that the democratisation of teaching is not being accompanied by a

democratisation of learning. Furthermore, at a time when the school's limitations are increasingly well-documented and conspicuous, the information and communication technologies are undergoing a massive boom, and many consider that these technologies could provide a major contribution to the learning processes to be conducted by children at school. Moreover, thanks to research in the cognitive and educational sciences, teachers currently have access to conclusions that explain the dynamics of learning more clearly and formally than ever before.

As we can see, several factors are prompting teachers to change their pedagogical practices and consequently their roles *vis-à-vis* their pupils, and the information and communication technologies are by no means the only incentive. In history teaching these technologies are exerting strong pressure because of the changes they are bringing about in historical research, but the fact that history learning and teaching frequently fail to increase mutual understanding and trust or tolerance and flexibility in intra- and extra-national relations is probably the most powerful incentive. This is the most spectacular failure of history teaching and learning! However, we cannot ignore the fact that the information and communication technologies are now capable, and will soon be even more capable, of taking over the encyclopaedic role which was long played by teachers and which is in some cases the only formal role to which they lay claim. The technologies can very easily replace a teacher who confines him/herself in professional terms to presenting information and knowledge to the pupils from the front of the class, asking them to memorise the facts and assessing how well they have memorised them with a view to awarding a mark. However, they cannot replace a teacher who takes on more active and committed roles in the pupils' knowledge construction process.

Given that it used to be impossible to provide pupils in history class with all the documents likely to supply the information and knowledge they needed for a comprehension of facts, situations and events, teachers would undertake to present such information themselves, and at the time their encyclopaedic role was indispensable. However, some of them unfortunately concentrated exclusively on this role. The boom in information and communication technologies and all the resources they now offer teachers in the field of history teaching and learning have provided both pupils and staff with a wide variety of multi-purpose documentary sources. In history class, these sources constitute an immense documentary base that can be considered by teachers as complementing

the written documents available and constituting "repositories" for the information and knowledge that are vital to the aims and objectives pursued. From this angle, with reference to the idea that information and communication technologies favour a new pragmatic relationship with knowledge, teachers become professional supports for the learning process rather than individuals dispensing information.

In relinquishing the encyclopaedic role, or rather by delegating it "under supervision" to the information and communication technologies, history teachers have to take on four different roles (as creator of learning situations, guide, mediator and model) if they wish to take an active part in constructing viable and functional knowledge on the part of their pupils. In their role as creators of learning situations they plan learning situations contextualised around problems or problem situations. The problems and problem situations create a "cognitive imbalance" in the pupils and the learning processes strive to strike a new balance. The learning processes primarily concern questions which the pupils themselves ask. It must be admitted that although up to now history teachers, like their colleagues in other disciplines, have created situations, most of these have corresponded to teaching rather than learning situations.

When using the information and communication technologies and taking account of knowledge construction dynamics, history teachers must also act as guides; some educationalists refer to a role as tutor or trainer. The learning situations require them to assist and support their pupils in their attempts to locate and consult various documentary sources. In playing this role, they attempt to stimulate the pupil's critical faculties *vis-à-vis* source reliability. Pupils must also have the requisite support for differentiating between important and secondary information and between facts and opinions, bringing their work into line with the target problem or problem situation and producing the expected results as per the objectives pursued.

In all learning situations teachers are also required to act as mediators between the information and knowledge and their pupils. This mediating role is crucial in the sense that history teachers must make the documentary sources consulted intelligible for their students. History teachers are "promoters of learning" who must ensure comprehension of facts, situations and events, provide the means of managing conflicting data and divergent viewpoints and support the development of skills enabling young people to draw sophisticated, well-argued conclusions. When acting as

mediators teachers must set aside periods not only for structuring knowledge but also for ensuring that the information consulted by the pupils is "cognitively translated" into knowledge. In this way they co-operate closely and directly in the pupils' knowledge construction process.

Teachers must also act as models. Learning situations centred on problems and problems situations as factors triggering learning processes require students to implement a multitude of activities or procedures, a phenomenon which might be called procedural knowledge. Depending on the pupils' competence, they may, for instance be unable to distinguish between primary and secondary ideas or to determine the reliability of a given documentary source. In such cases, in accordance with their role as models, teachers should undertake to demonstrate explicitly to their pupils all the co-ordinated actions required to differentiate primary from secondary ideas and gauge the reliability of a documentary source. In playing this role they are mainly endeavouring to give their pupils the means of efficiently conducting the action expected of them. The teachers become involved in developing cognitive tools which enable young people to process information and knowledge and transform them into in-depth knowledge.

Conclusion: some highly pertinent facts

The plethora of educational changes prompted by the integration of information and communication technologies into history teaching, as well as the need to construct viable and functional knowledge and the limits on the school's ability to influence young people's development, are challenging the pedagogical practices implemented by teachers hitherto. This challenge is likely to lead to professional changes that will have more to do with a clean break than any form of continuity. It is therefore vital that special attention be devoted to initial and further teacher training in the field of history. History teachers must be given a type of initial and further training enabling them to grasp the dynamics of learning and to plan and manage learning situations compatible with such dynamics, while simultaneously using the information and communication technologies.

Moreover, in view of the shortage of previous examples of learning situations actually implemented in classrooms to be used as illustrations for history teachers of a systematic and rigorous pedagogical approach incorporating the roles of learning situation instigator, guide, mediator and model, a bank of "exemplary" situations should be set up. However, it is vital that a specific organisation (perhaps the Council of Europe) establish a forum for exchanging and sharing teachers' pedagogical practices. This forum would be geared to developing a co-operation mindset among teachers in the history field. This would enable us to disseminate information on various experiments and practices, pinpoint their strengths and weaknesses and motivate professionals to carry on with these experiments and practices. The forum would enable various approaches to be spread Europe-wide.

It is abundantly clear from the history of educational change that assessment practices often thwart any desired changes, and so it is absolutely vital to consider the necessary coherency between pedagogical practices and assessment procedures, especially those leading to the award

of certificates. It is an acknowledged fact that assessment practices guide the pupils' learning processes and study strategies. The influence of assessment on their learning processes derives from the great importance of assessment in the school environment. For many pupils, their performance as denoted by a mark is much more important than the learning processes they complete or the knowledge they construct. This makes it vital for assessment situations to follow along the same lines as the learning situations. For example, it would be illogical to assess knowledge constructed on the basis of a specific problem or problem situation with a short question-and-answer type test or a test lacking a reference to any particular context.

All these educational changes in history class are aimed at ensuring that young people's learning about history helps construct tomorrow's society. One of the objectives of learning and teaching about Europe in the 20th century is to ensure that tomorrow's Europe is constructed in a spirit of mutual understanding and trust, using a tolerant and pluralist approach with an eye to democratic citizenship. Above and beyond mere words, pursuit of such an objective requires teachers to integrate conflicting data, multiple perspectives and transcultural interpretations into their history teaching. This is the price of ensuring that historical facts, situations and events give rise to relative comprehension. However, such relative comprehension is only really possible if students have an opportunity to develop their critical faculties in co-operation with the teachers and if the facts, situations and events are considered not in isolation but as phenomena belonging to a sequence, with the origins at one end and the consequences at the other. From this angle, many teachers will probably themselves have to develop a new relationship not only with history but also with history teaching

Appendix

Recommendation 1283[1]
of the Parliamentary Assembly of the Council of Europe
on history and the learning of history in Europe

1. People have a right to their past, just as they have a right to disown it. History is one of several ways of retrieving this past and creating a cultural identity. It is also a gateway to the experiences and richness of the past and of other cultures. It is a discipline concerned with the development of a critical approach to information and of controlled imagination.

2. History also has a key political role to play in today's Europe. It can contribute to greater understanding, tolerance and confidence between individuals and between the peoples of Europe – or it can become a force for division, violence and intolerance.

3. Historical awareness is an important civic skill. Without it the individual is more vulnerable to political and other manipulation.

4. For most young people, history begins in school. This should not simply be the learning by heart of haphazard historical facts; it should be an initiation into how historical knowledge is arrived at, a matter of developing the critical mind and the development of a democratic, tolerant and responsible civic attitude.

5. Schools are not the sole source of historical information and opinion. Other sources include the mass media, films, literature and tourism.

1. *Assembly debate* on 22 January 1996 (1st Sitting) (see Doc. 7446, report of the Committee on Culture and Education, rapporteur: Mr de Puig). *Text adopted by the Assembly* on 22 Januray 1996 (1st Sitting).

Influence is also exercised by the family, peer groups, local and national communities, and by religious and political circles.

6. The new communication technologies (CD-I, CD-Rom, Internet, virtual reality, etc.) are gradually extending the range and impact of historical subjects.

7. A distinction may be made between several forms of history: tradition, memories and analytical history. Facts are selected on the basis of different criteria in each. And these various forms of history play different roles.

8. Politicians have their own interpretations of history, and some are tempted to manipulate it. Virtually all political systems have used history for their own ends and have imposed both their version of historical facts and their definition of the good and bad figures of history.

9. Even if their constant aim may be to get as close to objectivity as possible, historians are also well aware of the essential subjectivity of history and of the various ways in which it can be reconstructed and interpreted.

10. Citizens have a right to learn history that has not been manipulated. The state should uphold this right and encourage an appropriate scientific approach, without religious or political bias, in all that is taught.

11. Teachers and research workers should be in close contact to assure the continued updating and renewal of the content of history teaching. It is important that history keep pace with the present.

12. There should also be transparency between those working in all areas of history, whether in the school classroom, television studio or university library.

13. Particular attention should be given to the problems in central and eastern Europe which has suffered from the manipulation of history up to

recent times and continues in certain cases to be subject to political censorship.

14. The Assembly recommends that the Committee of Ministers encourage the teaching of history in Europe with regard to the following proposals:

i. historical awareness should be an essential part of the education of all young people. The teaching of history should enable pupils to acquire critical thinking skills to analyse and interpret information effectively and responsibly, to recognise the complexity of issues and to appreciate cultural diversity. Stereotypes should be identified and any other distortions based on national, racial, religious or other prejudice;

ii. the subject matter of history teaching should be very open. It should include all aspects of societies (social and cultural history as well as political). The role of women should be given proper recognition. Local and national (but not nationalist) history should be taught as well as the history of minorities. Controversial, sensitive and tragic events should be balanced by positive mutual influences;

iii. the history of the whole of Europe, that of the main political and economic events, and the philosophical and cultural movements which have formed the European identity must be included in syllabuses;

iv. schools should recognise the different ways in which the same subjects are handled in different countries, and this could be developed as a basis for interschool exchanges;

v. support should be given to the Georg Eckert Institute for International Textbook Research, and Ministries of Education and educational publishers in member states should be asked to ensure that the institute's collection of textbooks be kept up-to-date;

vi. the different forms of history learning (textbook study, television, project work, museum visits, etc.) should be combined, without exclusive preference to any of them. New information technologies should be fully

integrated. Proper educational (and academic) standards must be ensured for the material used;

vii. greater interaction should be fostered between school and out-of-school influences on young people's appreciation of history, for example by museums (and in particular history museums), cultural routes and tourism in general;

viii. innovatory approaches should be encouraged, as well as continued in-service training, especially with regard to new technologies. An interactive network of history teachers should be encouraged. History should be a priority subject for European teachers' courses organised within the framework of the Council for Cultural Co-operation in-service training programme for teachers;

ix. co-operation should be encouraged between teachers and historians, for example by means of the Education Committee of the Council for Cultural Co-operation's new project on learning and about teaching the history of Europe in the 20th century;

x. government support should be given to the setting up of independent national associations of history teachers. Their active involvement in the European history teachers' association Euroclio should be encouraged;

xi. a code of practice for history teaching should be drawn up in collaboration with history teachers, as well as a European charter to protect them from political manipulation.

15. The Assembly supports freedom of academic research but would also expect professional responsibility as in the parallel field of broadcasting. The Assembly therefore recommends that the Committee of Ministers:

i. ask governments to assure continued financial support for historical research and the work of multilateral and bilateral commissions on contemporary history;

ii. promote co-operation between historians so as to help encourage the development of more open and more tolerant attitudes in Europe by taking account of different experiences and opinions;

iii. ensure that the right of historians to freedom of expression is protected.

16. European collaboration should be encouraged in the field of history. The Assembly recommends that the Committee of Ministers:

i. study the basic elements of the different histories of the peoples of Europe which, when accepted by everyone, could be included in all European history textbooks;

ii. consider the possibility of establishing in member states an on-line library of history;

iii. encourage member states to establish national history museums on the lines of the German "House of History" in Bonn;

iv. promote multilateral and bilateral projects on history and history teaching and in particular regional projects between neighbouring countries.

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