

Key Competences in Lifelong Learning

**Cultural Expression, Science and Citizenship:
some eTwinning success stories**

This publication contains the records of National eTwinning Seminars for 2007-2008
Organized by the Italian eTwinning Unit

Lecce, Hotel President, 22-23 November 2007

Desenzano del Garda, Best Western Hotel Oliveto, 6-7 November 2007

Pistoia , Villa Cappugi, 25-26 October 2007

Available in Italian

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www.agenziascuola.it

Translated in English by NTL

Florence, September 2007

Published with the contribution of the **European Commission – General Directorate for Education and Culture and the Italian Ministry of Public Education – General Directorate for International Education Affairs**

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Contents

Preface <i>Giovanni Biondi</i>	p.7
Introduction <i>Antonio Giunta La Spada</i>	p.8
Editorial Preface	p.9
How eTwinning Has Helped, Or Might Help, Through the Use of New Technologies, Innovation and Teaching in Relation to Key Competences <i>Clementina Muritano</i>	p.11
Knowledge, Skills and Competences: The Impact of the Lisbon Strategy On the Italian Education and Training System <i>Angelo Panvini</i>	p.13
The contribution of eTwinning to the development of Key Competences: Mathematics, Science and Technology	p.19
The Contribution of eTwinning to Innovation – Mathematics, Science and Technology (MST) <i>Emanuele Manfredini</i>	p.21
The Use of ICT in the Teaching of Mathematics and Science <i>Franco Di Cataldo</i>	p.29
Project Kits for the Mathematics, Science and Technology Area	p.37
Think Different: Alternative Energy and Environmental Awareness	p.38
How Green Are You?	p.39
Mathematics in Reality	p.40
Our creepy housemates	p.41
Know your Flavours!	p.42
A European Snack	p.43
The contribution of eTwinning to the development of Key Competences: Social and Civic Competences	p.45
The Web and the Social Construction of Knowledge <i>Anselmo Grotti</i>	p.47
Civic and Social Competences and Education for Citizenship: A Silent Interaction <i>Marilena Beltramini</i>	p.53
IST and Civic, Social and Intellectual Participation <i>Marco Guastavigna</i>	p. 67

Project Kits for the Social and Civic Area	p.73
Colours and Sounds of Tolerance and of Active Citizenship	p.74
Democracy in What Sense?	p.75
The Upside and Downside of Rights	p.76
'Touring' Europe	p.77
Developing Flexible Attitudes and Behaviour	p.78
Guidelines for the European Traveller	p.79
The contribution of eTwinning to the development of Key Competences: Cultural Awareness and Expression	p.81
Creative Expression and New Media <i>Linda Guarino</i>	p.83
The Twinning Experience Space <i>di Laura Parigi</i>	p.89
Project Kits for the Cultural Area	p.97
Arts and Crafts, Let's Meet in Piazza Europa	p.98
Beauty In & Out	p.99
Virtual Gallery	p.100
I... The Artist. From Artwork to Mural	p.101
The Oil Road: Past and Present	p.102
Today I'll Have Some Fun	p.103
We Plog!	p.104
Appendixes	p.105
<i>Methodological Note on the Organization of the Workshop Groups</i>	p.106
<i>Workshop Guide for the Facilitators</i>	p.108
<i>Worksheets</i>	p.111
<i>Results and Evaluation of Workshop 1: Difficulties Encountered</i>	p.117
<i>Seminar Feedback Questionnaire</i>	p.121
<i>Evaluation of the 2007-2008 Inter-regional National Seminars</i>	p.122
<i>Programme of the Pistoia Seminar</i>	p.125
<i>Programme of the Desenzano del Garda Seminar</i>	p.126
<i>Programme of the Lecce Seminar</i>	p.127
<i>Recommendation of the European Parliament and of the Council on Key Competences for Lifelong Learning</i>	p.128

PREFACE

European society has changed radically in the last twenty-five years, in particular with the onset of globalization, which is also related to the development of digital technology. The old, traditional ways of doing things have changed, and indeed change is itself the salient feature of modern society. New technologies have revolutionized working tools, organizational paradigms and procedures in every sphere of society.

The economy has changed, and with it the world of work. In this fluctuating scenario, what should the education system be teaching citizens of the 21st century? One of the traditional functions of schools has always been to prepare schoolchildren to enter the job market. But what work? We are often told that in the future there will be new professions which we currently cannot even imagine, and that in the course of their adult lives people will often find themselves having to change. So if the education system wishes to prepare schoolchildren for the society of the future, it will have to offer them “transferable assets” that can earn interest over time. In other words, not content or teachings that will become obsolete in a few years’ time, but competences that can be applied in different contexts, in the working world but also in people’s private and personal lives. That is why the concept of lifelong learning is so crucial, and it is no coincidence that one of the goals of the Programme is to promote innovation in educational systems.

The shift of the eTwinning Action from e-Learning to the Lifelong Learning Programme is significant. Even though the characteristic feature of eTwinning lies in the use that is made of new technologies, its contribution is not limited to the integration of ICT into teaching and the reinforcing of foreign language skills. The use of these competences are also developed, modified and promoted in cross-disciplinary terms, as tools for “helping young people to acquire the basic competences required for adult life and the competence required for their personal development, subsequent employment and active European citizenship.”

Though the official documents, for example the one establishing the Lifelong Learning Programme or the Recommendation regarding key competences, examine real and contingent problems, they are often expressed in general, abstract terms, and do not contain project recommendations or practical objectives. This is the task of the EU’s Actions, the “operational branch” of the Union’s policies, which offer European schools a unique opportunity to try out innovative educational paths and to contribute to bringing about the desired change.

This is precisely what the Italian eTwinning Unit tried to do in the year in which it joined the Lifelong Learning Programme: to give concrete shape to abstract statements, to find feasible options leading to innovation for and with teachers, who in their everyday working lives traverse but at the same time outline the map leading to the realization of the Lisbon objectives.

Giovanni Biondi
Director General
ANSAS, formerly Indire

INTRODUCTION

eTwinning and key competences

As of the year 2007, the General Directorate for International Affairs of the Italian Ministry of Education initiated, together with the eTwinning National Support Service, (ANSAS), a training path to support the activities of schools that have entered the world of eTwinning.

eTwinning can be described as a short-or long-term collaboration between two or more schools in European Union nations taking part in the action. They realize a shared project by making use of Information and Communication Technology (ICT) such as internet, email, video conferencing, etc. Currently eTwinning is part of the Lifelong Learning Programme 2007-2013, as a special Action of Comenius.

The European Recommendation published in 2006 identifies eight key competences for lifelong learning. These are considered essential for being able to fit into the social and working environment. The competences concerned are: knowledge of one's mother tongue; of foreign languages; of mathematics, science and technology; social and civic competences; cultural awareness and expression; digital competence; and two broad competences – sense of initiative and entrepreneurship, and learning to learn.

Learning to tie in eTwinning and its drive for quality with the key competences that everyone needs to attain for a successful educational career and throughout their lives is our response to the recommendations emerging from the LLP, of which eTwinning is now an integral part. The aim of the Actions making up LLP is to place at the centre of all initiatives the diffusion of knowledge of the EU's conclusions regarding permanent lifelong learning and the activation of experiments useful for acquiring key competences, in order to further the Lisbon objectives.

Therefore, in the context of the need to reinforce the European dimension of educational policies, eTwinning can be regarded as another useful element in the drive towards the gradual, but tangible, construction, of a distinct European educational space.

The MIUR (Ministry for Education, Universities and Research), through the Directorate General for International Affairs, will continue to support the full use of the opportunities offered by transnational cooperation within a single framework of interventions. This is in order to ensure the effective coordination of all interested parties, to monitor experiences and to publicize best practices so they can be used by all.

Antonio Giunta La Spada
Director General
Directorate for International Affairs
Ministry of Education (Italy)

This publication follows the same structure as the eTwinning Seminars held in 2007-2008 and further explores the connection between eTwinning and three of the eight key competences contained in the Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning.

The first volume opens with an introduction to the key competences and seminars, and is followed by thematic in-depth studies by experts in specific sectors. These studies were especially reworked for this publication, and have been grouped together with and complemented by the relevant “project kits” that were prepared by the participants during the course of the seminars.

Although teachers played a significant role in the seminars thanks to their hardworking participation in the workshops, their work is only represented in this volume by the above-mentioned kits, which were often written in a very short period of time and only expounded in full during oral presentations in the plenary session.¹ These kits only represent the tip of the iceberg of the activities concerned and do not do justice to the excellent work.

We would like to say a heartfelt thank you to all the teachers who actively participated in the seminars, largely determining their success, as well as the USR (Regional Education Office) and MIUR (Italian Ministry of Education, Universities and Research) representatives who collaborated with the Italian National eTwinning Unit in the management of the workshops.

The first volume ends with an appendix on applied methodology and the workshop results; all the utilized documents are available.

Finally, the second volume of the publication provides practical examples of eTwinning projects that developed the key competences discussed in this volume, selected from among projects that were awarded the Quality Label in 2007-2008.

¹ Since the Power Point presentations produced during the workshops on the conceptualized projects were often incomplete, with the help of the teachers elected as spokespersons during the seminars and/or what the facilitators could remember, we have tried to fill in any gaps when reading and comprehension of the project proved difficult and incomplete. We apologize to participating teachers for any inaccuracies or misleading additions.

How eTwinning has helped, or might help, through the use of new technologies, innovation and teaching in relation to key competences

by Clementina Muritano

Directorate General for International Affairs, Ministry of Education (Italy)

The three interregional seminars held in Pistoia, Desenzano and Lecce are an important step in the quality-oriented training programme which the Agenzia Scuola (formerly INDIRE, the National Agency for the Development of School Autonomy), with the approval of the Ministry of Education and the Regional Education Offices, has embarked upon to support the activities of schools entering the world of eTwinning. These seminars focused in particular on how eTwinning has helped, or might help, through the use of new technologies, innovation and teaching in relation to key competences. In the Recommendation of December 2006, these competences were defined by the Ministries of Education as essential personal assets for every human being.

Linking eTwinning and its quality-based objectives to the key competences that all citizens should have acquired by the end of their scholastic career and maintain during their lifetime is one response to the indications presented in the Lifelong Learning Programme (LLP), of which eTwinning is an integral part. The indications require that all the Actions pertaining to the LLP should revolve around the diffusion of European Community conclusions with regard to education and experiences useful for the acquisition of key competences, thereby contributing to the attainment of the Lisbon objectives.

Moreover, the three seminars were in line with the indications of the Ministerial Memorandum dated June 2007, *Più scuola in Europa, più Europa nella scuola* ("More Schools in Europe, More Europe in Schools"), which provides guidelines to promote, encourage and attribute value to the European dimension in education. Educational and professional training policies are central to the achievement of an active European citizenship that values the personality of each individual during their lifetime, and they also make a vital contribution to economic development founded on equality and social cohesion. Therefore, there is a clear need for a comprehensive strategy directed towards the promotion, development and implementation of a European dimension in education in terms of values, motivations and knowledge. The concept of a European dimension in education should, however, be understood in a dynamic sense, as a continuous process of interaction based on the knowledge and respect of pluralism and diversity – a diversity that forms part of Europe's cultural legacy and wealth. New generations must therefore be helped to develop a more acute sense of European identity and European values, to participate in a fuller and more responsible way to the social and economic development of the European Union, and to learn more about Member States, the European Community and EC policies from a historical, cultural, economic and social point of view.

For some time now, the Italian Ministry of Education has been working to implement the opportunities offered by transnational cooperation at a grassroots level, through fruitful collaboration with Regional Education Offices, schools and local authorities; this collaboration also relies upon and benefits from partnerships with local institutions. In particular, consider the Lifelong Learning Programme (which now incorporates the Comenius, Grundtvig, Erasmus and Leonardo Actions), *L'Europa dell'istruzione* (Europe for Education), the Italian National information and awareness programme for *Istruzione e formazione 2010* (Education and Training 2010), and the events correlated to the themes adopted *Un Manifesto delle alunne e degli alunni europei* (the European Student Manifesto).

As a boost to the Actions and synergies implemented thus far, the Italian Ministry of Education has recently drawn up guidelines to enhance the value of school autonomy and to safeguard specific territorial identities within a shared framework that combines proposed and realized experiences and acknowledges the fundamental importance of a partnership with the territory.

Più scuola in Europa, più Europa nella scuola (more Education in Europe, more Europe in Education) is the essential message sent by the Ministry of Education to schools in general, an invitation to make the European dimension their “natural” environment, exploiting it for strategic comparability, territorial programming and operational commitment, by applying the following political and institutional strategies:

- sustaining the growth of a territorial coordination that exploits the experience acquired by regional intervention teams to support pilot schools and school networks with a European and international vocation;
- sustaining the commitment of all the subjects involved in order to define and implement an educational programme with a European dimension;
- encouraging communication and documentation to inform, train and operate at a local level, as well as gather information about and listen to what young people, the school system in general and the respective territories have to say about Europe.

In particular, the preferred thematic macro-areas could be:

- themes inherent to the history and principles of European treaties and the European Constitution;
- themes connected to the Lisbon objectives, also adopted in the education and training programme *Istruzione e formazione 2010*;
- themes correlated to key competences for lifelong learning, based on the Recommendation of the European Parliament (2006);
- E.U. European Year themes: 2007 – European Year of Equal Opportunities for All; 2008 – European Year of Intercultural Dialogue; 2009 – European Year of Innovation and Creativity.

The eTwinning seminars are therefore clearly and perfectly in line with the Italian Ministry’s above-mentioned strategic action.

The three seminars had a similar structure and organization, in order to be able to compare results and monitor follow up. The topics and themes used as the basis for devising proposed eTwinning projects to present to colleagues from participating countries made specific reference to 3 of the 8 key competences, namely:

- Mathematics, Science and Technology
- Social and Civic Competences
- Cultural Awareness and Expression

The seminars commenced with a general presentation of the national and European context, followed by an introduction to key competences by three educational experts, with particular emphasis on the role of new technologies in teaching. The participants then formed into groups and did theme-based workshops under the guidance of experts in the discipline concerned, in European programming and in eTwinning tools. Focusing on the chosen competence, they developed project ideas that were then presented to colleagues from other countries, with a careful eye on the guidelines contained in the Recommendation. The resulting project ideas, elaborated according to the classic eTwinning proposal model, were presented during the concluding plenary session.

Knowledge, Skills and Competences: The Impact of the Lisbon Strategy on the Italian Education and Training System

by Angelo Panvini

Technical Inspector, Directorate General for Post-Secondary Education, Ministry of Education (Italy)

Profound changes have occurred in the mechanisms for the production, accumulation and transmission of knowledge, not only with regard to the swift development of knowledge processes (in the last century humanity is thought to have accumulated more knowledge than in all the rest of history put together), but also in terms of modes of transmission (horizontal and reticular), new forms of knowledge and the impact of these phenomena on the economic level, especially in relation to development and employment.¹

On a European level, many convergent contributions have highlighted this cultural revolution² from a new lifelong learning perspective.

Over time there was a gradual development of a Community policy that subsequently evolved into the *Lisbon Strategy*. As is well known, this strategy interacted profoundly with the endogenous and exogenous evolutionary dynamics of Italy's education and training system. This took place in relation to three, often convergent points of view: the principal changes of a more strictly cultural nature; the institutional participation and teaching organization; and finally, the logic of the system and of the interaction between school autonomy and governance of an integrated education and training system.

In chronological terms, my analysis begins in 1997, the year I have formally established as a point of departure – not that this is the origin of the process, which is of a long-term nature, but because a number of particularly significant events took place in that year on a European and national level.

In 1997, in fact, official EU documents acknowledged the profound changes that have been taking place in the mechanisms for producing, accumulating and transmitting knowledge. The Hamburg Conference held on 14-18 July 1997, preceded by an important UNESCO conference in Florence, systematized many of the findings of previous and current debate into an adult education perspective.

¹ Authors who have written about this theme from various perspectives include Tullio De Mauro (De Mauro, 1963) and Raffaele Simone (Simone, 2000).

² The following are particularly worthy of mention:

“L'apprendimento in età adulta: una chiave per il XXI secolo”, Florence 19-20 March 1997, preparatory document for the V UNESCO Global Conference, Hamburg 14-18 July 1997; Jacques Delors' White Book on *Growth, Competitiveness and Employment*, 1993, which discusses unemployment in EU Member States and is the most authoritative contribution made by Community institutions to face the worst economic and social crisis experienced by the European Union.

The globalization of trade, the information society, and scientific and technical progress have been analysed by Édith Cresson in a European Commission White Paper. She stresses the changes caused by these phenomena in businesses (new forms of employment), schools (new forms of knowledge) and everyday life (changes in habits and lifestyles). Édith Cresson: *Teaching and Learning: Towards the Learning Society*, 1995.

In accordance with this and with the lifelong learning perspective confirmed by the Hamburg Conference, Italy issued Ministerial Order no. 455/1997, which instituted what in Italy are known as CTPs (Territorial Centres for Adult Education). These tend to have an *opportunity-based* welfare outlook, as opposed to the essentially *compensatory* approach reflected in such initiatives as *150 ore* (150-hour courses) for workers and evening courses run by technical and professional training institutes.

New types of learning programmes were envisaged in addition to those oriented towards providing students with qualifications, for instance short, modular courses designed to provide new target groups (foreigners, people with restricted personal liberty, etc.) with a functional and cultural literacy.

Due to the strong feedback effect to these innovations, a new culture began to spread in the mainstream education system. Modularity, continuity, horizontality and reticularity tended to substitute the linear, sequential, transmissive and discontinuous nature of the Italian education system and of teaching practice at its various levels.

What emerged in a quite pervasive fashion was the need to acquire competences that are not transmitted once and for all, but can be implemented during the course of a person's lifetime. In this period, there was extensive debate in the school system and amongst professional associations, especially in concomitance with the law reforming State Examinations (Law 425, passed on 10 December 1997).³

A proactive synthesis of European orientation was provided by the European Council in Lisbon on 23-24 March 2000:

Europe's education and training systems need to adapt both to the demands of the knowledge society and to the need for an improved level and quality of employment. They will have to offer learning and training opportunities tailored to target groups at different stages of their lives: young people, unemployed adults and those in employment who are at risk of seeing their skills overtaken by rapid change. This new approach should have three main components: the development of local learning centres, the promotion of new basic skills, in particular in the information technologies, and increased transparency of qualifications.⁴

The Council established important targets for all Member States, to be achieved by 2010. These objectives revolved around the concept of *development*, which lies at the heart of the Lisbon Strategy.

³ The relative material can be found in "Per un nozione condivisa di competenza" *Annali della Pubblica Istruzione*, 1-2, 1999.

⁴ Lisbon European Council, Presidency Conclusions, paragraph 25: <http://www.europarl.europa.eu/summits/lis1_it.htm>

In the Education and Training sector, the Council of Lisbon established the following reference parameters:

- to help at least 85% of twenty-two year olds and 80% of people aged 25-64 to complete their higher secondary school studies;
- to raise the average number of European workers aged 25-64 participating in lifelong learning to 12.5%;
- to maintain school leaving during the second cycle below 10% and to halve school leaving in secondary schools with respect to the year 2000, improving student's basic competences and their prospects for employment;
- to halve the percentage of fifteen-year olds with poor reading, mathematical and scientific skills.

The above set of goals were centred on the development of the human being, the right to education throughout a person's lifetime and the acknowledgement of received education and training, however and wherever it is acquired (*life-wide learning*).

From a more strictly pedagogic perspective, there was a growing conviction that knowledge/learning is a complex process, involving explicit and tacit kinds of knowledge that can articulate and not just sum up resources originating from various sources.

The rational-transmissive approach - where the learning process consists in a progressive adaptation of cognitive structures and representative schemata as a function of a *strong conception* of reality – gradually began to give way to a perspective characterized by a mode of thinking that *constructs*, in a social learning dimension, interpretative hypotheses of reality. Here, knowledge/learning is a complex and multidimensional process (Morin, Varela, Prigogine) relating to multiple intelligences distributed in a systematic vision of mind and body, emotions and rationality (H. Gardner, J. Bruner, M. Cole etc.).

These concepts played an important role in shaping the cultural climate in which the Lisbon Strategy – a real *lifelong learning* strategy characterizing the *eurolearning* scenario – was developed. It contained the most important development dynamics of the education system. Within this strategy, which combines education and training, research and work, great importance was attributed to processes leading to the *acquisition of competences*, each of which has its own specific characteristics.

Some of the salient features of such processes are as follows: individuals build their own competences, since knowledge is the product of learner activities; interpretative models, scientific laws, and so on are mental representations that learners produce for themselves and others; and learning only exists within a social dimension and people acquire knowledge in various contexts – *formal, informal and non-formal*.

Of increasing centrality at both a national and European level were theoretical and application-oriented developments regarding the issue of the *certification of competences*. This was closely linked to the above-mentioned human right to see one's learning achievements recognized, *however and wherever* they are acquired, thereby establishing a connection between formal, informal and non-formal systems. It also tended to presuppose the definition of shared standards and levels of competence, also with a view to guaranteeing the correlated right to personal and professional mobility (Maastricht).

In recent years, important innovations have increasingly characterized the progressive development of the lifelong learning context. These undoubtedly include the Report on Adult Education (614 def. 23/10/2006) and the Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning (962/EC).

In particular, the framework of key competences for permanent learning indicated by the Recommendation of December 2006 as a common cultural threshold to prepare young people for adult life and offer them a way to continue learning throughout their entire lifetime makes it possible to view those key competences, in compliance with the above-mentioned EU guidelines, as a combination of knowledge, skills and attitudes suitable to the context and directed towards the achievement of personal fulfilment, active citizenship, social cohesion and employability.

In line with the above-mentioned developments, further progress has been made with regard to the acknowledgement of formal and informal learning in the European youth sector with the approval of the Council Resolution on formal and informal learning on 20 July 2006.⁵ This, in turn, is a further development of the European Parliament and Council Resolution (no. 2241/2004/EC) of 15 December 2004, relative to a single Community framework for transparency in qualifications and skills (Europass).⁶ By the end of the current year, the European Parliament and Council will emanate a Recommendation for the establishment of a European framework for lifelong learning qualifications and certifications (EQF) [editor's note: approved on 23 April 2008].⁷

The influences of this extensive process of European and international innovation on our education system have become increasingly important and systemic, not just with regard to the adoption of or reference to European skill certification guidelines, but because the entire system has gradually established a competence approach based on *learning outcomes*.

⁵ The Resolution of the Council and Member States Government Representatives regarding recognition of the value of non-formal and informal learning, 20 July 2006, extract from document:

“[...] to encourage, while considering the specific situation of each Member State, the development of a specific, comparable and transparent component, within the Europass, to identify and acknowledge the skills and competences acquired by young people through formal and informal learning, that can be annexed to or become an integral part of the certificates, or other acknowledgement tools to provide third parties, particularly other Member States, with a clearer meaning of an original certificate in terms of the knowledge, skills and competences acquired by the holder...”

⁶ Europass brings together five documents in a single framework: the Curriculum Vitae, Language Passport, Diploma Supplement, Mobility, Certificate Supplement. The aim is to provide a clear and transparent explanation of competences and skills acquired in terms of both education and training, in the workplace and everyday life. <<http://www.uknec.org.uk/>>.

⁷ <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:111:0001:0007:IT:PDF>>

This is the spirit in which one can consider the Ministerial Decree passed on 31/07/2007, *Indicazioni per il curricolo per la scuola dell'infanzia e per il primo ciclo d'istruzione* ("Curriculum Guidelines for Nursery Schools and the First Education Cycle"); the new compulsory education regulations, viewed in the context of the right/duty to education and learning; the guidelines for the reordering and development of Adult Education, not just in terms of organization, but also and above all, in terms of learning programmes and correlated evaluation strategies.

Great importance is therefore attributed to the quality of learning on the part of young people and adults, in order that they may exercise to the full their right to an active citizenship. In order to achieve these quality goals, it is necessary to sustain and support school autonomy, which also involves the provision of specific tools for the purpose.

In conclusion, within this context we cannot but stress the crucial importance of the contribution made by teachers and schools in a range of significant projects, which, in the case of eTwinning, combines a European perspective and a national dimension, places emphasis on the value of rules but also on the development of autonomy, thereby offering learners an increasingly valid form of support and encouragement in their education.



The contribution of eTwinning to the development of Key Competences: Mathematics, Science and Technology

Definition of the European Recommendation, December 2006

“Mathematical competence is the ability to develop and apply mathematical thinking in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought (logical and spatial thinking) and presentation (formulas, models, constructs, graphs, charts).

Competence in science refers to the ability and willingness to use the body of knowledge and methodology employed to explain the natural world, in order to identify questions and to draw evidence-based conclusions. Competence in technology is viewed as the application of that knowledge and methodology in response to perceived human wants or needs. Competence in science and technology involves an understanding of the changes caused by human activity and responsibility as an individual citizen.”

The Contribution of eTwinning to Innovation – Mathematics, Science and Technology (MST)

by Emanuele Manfredini

ANSAS (National Agency for the Development of School Autonomy) – formerly IRRE Tuscany

Context

The Lisbon Strategy set out for the European Community the goal of becoming the world's most competitive knowledge-based economy by 2010. This is a very ambitious and challenging objective, since the mechanisms of profit, wealth and wellbeing have been impacted by the winds of change and innovation. Neologisms such as *Wikinomics* testify to how the pervasiveness of technology is not limited to an operational level, but now impinges upon models of thought as well.

The strategic role of science in Europe in the near future is clearly described in the passage below:

Scientific progress has helped us understand unimaginable things about the sky, the earth, living beings and the mind. Over the centuries, science, especially basic research, has been the powerhouse of innovation. The world is aware of this, which is why investment in research now exceeds 1,000 billion dollars. The commitment to science, the prerogative of just a few countries in the past, has now been extended to many others. In fact, the centre of gravity of global finance has shifted from the Atlantic to the Indian and Pacific Ocean. Up to the 90s, USA, Canada and Europe were the fundamental axis for basic research. Today, things have changed. China is increasing its investment at an annual rate of 20%, and will soon double it. The increase in India is 8%. The same goes for other Asian countries. In the West, the number of people enrolling in science courses is decidedly low, while in China the figure has risen from two to six million in the space of ten years. If these trends continue over the next decade, more than 90% of chemists, physicists and engineers will be of Asian origin and will be working in Asia.¹

There is a general consensus that, in order to cope with such a scenario, an essential contribution must be made by education and training systems, which are currently being reorganized across Europe, both internally and in relation to other social systems. The mainstay of this renewal process is the concept of *competence*.

While recognizing the importance of strictly discipline-related skills, current interest revolves around definitions of so-called lifelong competences, which can equip students to deal with real life problem situations and to actively exercise their citizenship rights.

The OECD reference framework, drawn up in the ambit of the Programme of International Student Assessment (PISA) survey, is fast becoming the paradigm for such an approach; this reference framework is consistent with and overlaps, at least in part, with other European or national guidelines.

¹ Document of the Interministerial core group for the Development of Scientific and Technological Culture of the Italian Ministry of Education, Universities and Research (MIUR), 2007, p. 3.

However, the state of affairs in Italy as depicted in recent national, European and international surveys is not very flattering. It is therefore necessary to acknowledge how critical the situation is, analyse the causes and act to remove them.

The European dimension of education and new technologies hold possibilities which, although they have been outlined for some time now, have only been partially explored.

The eTwinning action, which embraces both these components, can contribute to methodological, teaching and disciplinary innovation and make a positive impact on the entire system.

The idea of *lifelong learning* has long been closely connected to the essence of the citizenship concept. It is the key tool proposed by the European Community to sustain “personal fulfilment, active citizenship, social cohesion and employability in a knowledge society”.² Various measures were introduced to substantiate this approach, ranging from the boosting of adult education programmes to integration between professional training and education systems and the defining of functional tools enabling the valorization of competences acquired in formal and/or informal spheres.

In this highly complex structure, the school system plays a crucial role in sustaining lifelong learning. The utility of “content” acquired during a given education programme is of more limited duration with respect to the past. Therefore, at school pupils need to develop and acquire the key competences – be they subject-related, methodological and/or social – that will facilitate learning in later phases of their lives.

eTwinning: A Chance to ...

The experience of eTwinning in the school system needs to be viewed in this context. It offers an opportunity to motivate pupils towards significant learning and teachers towards a different and innovative approach to their profession. It is also a chance to show how *Europe* itself can be the *subject*, *tool* and *environment* for learning.

eTwinning provides the opportunity to improve language skills, since language becomes a means of communication and not just the goal of a self-referential learning process. It is a concrete chance to learn all about Europe, providing multi/intercultural immersion through contact with peers from other countries. Furthermore, it is an opportunity to contribute to the construction of a European identity and citizenship by operating in the field of learning; in this sense, it may also be a place where students can acquire experience of cognitive democracy, without which any form of democratic experience would be impossible. In short, it helps pupils to acquire the key competences considered necessary by the European Community to sustain lifelong learning.

Key Competences

The European Community indicated eight competences, formally articulated in terms of *knowledge*, *skills* and *attitudes*. The focus of attention here is mainly on the third competence, “Mathematical competence and basic competences in science and technology”.

Skipping over the traditional categories of content, we will only highlight certain aspects that are particularly “resonant” with the potential of eTwinning.

² “Key competences for lifelong learning” (attached to the European Recommendation 2006-2006/962/EC), Law. 394/13. The full text is included in this volume.

The definition of “mathematical competence” is based on the ability to solve problems in everyday contexts, and places emphasis on aspects of the process and the habit of using models of thinking (logical and spatial) and presentation (formulas, constructs, graphs, charts, etc.). It consists in the ability to identify structures and connections, repetitions and systematicity. Moreover,

A positive *attitude* in mathematics is based on the respect of truth³ and willingness to look for reasons and so assess their validity.⁴

“Basic competences in science and technology” consist of the ability to explain the way the surrounding world works, being accustomed to reaching evidence-based conclusions, understanding the importance of using scientific and technological results in response to the desires and needs of human beings, while recognizing the social responsibility that scientific progress brings with it. In fact, this competence

includes an attitude of critical appreciation and curiosity, an interest in ethical issues and respect for both safety and sustainability, in particular as regards scientific and technological progress in relation to oneself, family, community and global issues.⁵

In short, science must be viewed in relation to ethical issues concerning the major themes of safety and sustainability.

There are, however, other competences involved in an eTwinning project. One of these is “Digital competence”, understood as something that supports working and leisure activities, and communicative potential, helps creativity and innovation and contributes to the creation of cultural, social and/or professional networks. Moreover, eTwinning also stimulates the acquisition of meta-cognitive skills associated with “Learning to learn”, because they contribute to an awareness of one’s own learning process and training needs, can strengthen motivation and confidence and provide the impulse to seek out new educational opportunities in the present and professional ones in the future.

Understanding Is Fun! – Structuring a Curriculum

Understanding is, or rather, *can be* fun if commitment goals are clear, the expected return from this commitment is similarly well-defined and constructive, and the activity that is being tackled is engrossing; if, to all effects, there is a real challenge that requires the acquisition and use of competences; and if there is a synergic interaction between action and thought.⁶

Recent research in science teaching has produced findings that can help teachers be more effective in their practice. This research has shown how important it is that learning should take place in *contexts of meaning*, that is, where a common goal or activity makes sense and is therefore motivating, providing an opportunity to pose both authentic and

³ In the sense, according to the author, of respecting the logical consistency of an argument.

⁴ European Recommendation on key competences, 2006, op cit., L. 394/15.

⁵ Ibid.

⁶ Incidentally, these are the characteristics of learning through play mediated by new technology, a topic discussed by numerous authors including Veen and Vrakking, and Prensky, who are also quoted in the bibliography.

artificial questions. It is also important that the proposed activity be perceived as *significant, consistent and relevant* with respect to pupils' personal experiences, otherwise, the risk of rejection is high. Moreover, teaching and curricular innovation also entails the search for greater synergy between the various formal, informal and non-formal spheres. This is a challenge both for individual teachers and for the entire school, viewed as an organization that should try to open its doors to the local community. In this context, it would be desirable to attribute value to knowledge and competences acquired by students outside school, thereby helping to create greater unity between each individual's personal and educational experiences.

Local management of school implies to devise the school curriculum. This should not be viewed as a mere linear succession of content units, but rather as the organization of a series of (meaning) contexts within which to develop intra-and interdisciplinary networks between blocks of content. It is therefore a cluster of content, methodologies and teaching strategies tailored to the fulfilment of pre-established educational objectives.

The metaphor used by Confrey to describe the curriculum is particularly pertinent: she sees it as a conceptual corridor with a precise direction but with various possible internal trajectories.

eTwinning can make a significant contribution both to effective science teaching and to an effective and balanced construction of the school curriculum.

But what role do students and teachers play in this process? The table below is taken from official documentation provided by the Pedagogical Advisory Group (PAG).⁷

Content			
a Strongly theory directed, curriculum based	b More theory directed, curriculum based	c More practice orientated, problem based	d Strongly practice orientated, problem based
Responsibility			
a Teacher centred	b Teacher sometimes hands over responsibility to learners	c Teacher mostly hands over responsibility to learners	d Learners have full responsibility
Pedagogical Relationship			
a Teacher is expert, pupil learns	b Some of the teacher activities are coaching	c Teacher has a coaching, facilitating and supportive role	d Teacher is actively participating in the learning process alongside students

⁷ Pedagogical Advisory Group, Reflections on eTwinning – Pedagogical issues in eTwinning, 2006, p. 4.

This table is used to classify eTwinning projects on the basis of three variables, *content*, *responsibility* and *pedagogical relationships*. eTwinning involves various project typologies, ranging from those based on traditional teaching approaches – column (a) – to more innovative ones.

The last column, (d), characterizes projects with a high practice-oriented content, based on the solution of concrete problems; students bear full responsibility for what takes place during the learning path; the pedagogical relationship is set up in such a way that teachers actively participate in the learning process with the students. The completion of an eTwinning project of this kind is a learning opportunity not just for students, but for teachers as well, and teachers who put themselves on the line in this way are repaid by the discovery of experiences they would never have imagined at the beginning of the course. In short, the projects provide a concrete experience of lifelong learning.

Tools

Various technological tools may be used to support different educational actions, and they all find their place in the development of an eTwinning project. First of all, thanks to communication-oriented applications, it is possible to maintain contact with pupils and teachers in other classes/schools and/or experts in an international context. Secondly, as it can now be taken for granted that there is no one unique form of intelligence, but a range of intelligences distributed differently in each individual, it follows that there are a host of different learning styles. By fully exploiting the multimedia potential of new technology, it is therefore possible to activate multiple communication channels, and to increase the level of individualization and personalization of teaching/learning processes. Moreover, it is possible to transform distance from a limitation into a resource, activating distributed (in space and time) and collaborative learning mechanisms.

Finally, an eTwinning experience may provide the stimulus for further and more well-structured collaborations, developed within the ambit of other EU Actions. The tool proposed by the Italian National Agency has proven very useful for the new eTwinning platform.⁸

Some Ideas

Following these considerations regarding connections between eTwinning experiences and teaching innovation in MST, it is perhaps time to provide a few ideas in the *multiplicative* spirit discussed in Anselmo Grotti's contribution to this publication. Included below are some suggestions (by no means the only ones), which, it is hoped, will inspire effective planning.

Starting with *Mathematics*, eTwinning projects could be developed around:

- Statistical surveys characterized by collaboration at every phase, from discussion about which variables to investigate to the structure of a questionnaire and the data analysis. Focusing on facets of real life, technical and subject-related aspects intertwine with the cultural level, creating a motivating context in which various subjects may be learnt.

⁸ To this end, refer to the article by the Italian eTwinning Unit (Unità eTwinning Italia), published on the Italian national website of the Lifelong Learning Programme, which anticipates the change proposed by the new eTwinning platform towards teacher centrality and improved comparison and exchange of teaching experiences in a European dimension (Ceccherelli, 2008).

- The pedagogic mesh between mathematics and music, coupling intercultural musical exchange with the rigour of mathematical analysis, starting from primary school years and progressively adapting the project to the age of the pupils.
- The history of mathematics and science, grounding projects on contacts, exchanges and scientific competitions in the past. As an example, consider the “dispute” between Newton and Leibniz regarding the birth of infinitesimal calculus, which would naturally lead to a twinning between the United Kingdom and Germany. Such a project would facilitate an in-depth study of common European cultural roots.
- A technical and artistic study of the use of symmetry in Arabic art in Europe, bringing together various countries – and not just European ones, thanks to MedTwinning – which, in their history, have come into contact with Arabic culture (Italy, Spain, etc.).



Moving on to *Sciences*, eTwinning projects could be built around:

- Remotely controlled experiments using robotic telescopes or other robots, microscopes and other equipment, with which it would be possible to interact at a distance through the Web.⁹
- Periodic chat sessions with experts on a chosen topic.¹⁰
- Twinning parallel to a research partnership between schools located in various European countries, such as the EGO – VIRGO consortium,¹¹ between the Italian National Institute of Nuclear Physics (INFN) and the French *Centre national de la recherche scientifique* (CNRS), which includes 13 laboratories in Italy and France, as well as 1 in The Netherlands.
- Collaborative scientific surveys, such as the one carried out in the project *Misura della radioattività ambientale* (Measurement of Environmental Radioactivity), established thanks to collaboration between the Italian Physics Society (SIF), the Italian Association for the Teaching of Physics (AIF) and the Italian National Institute of Nuclear Physics (INFN), financed by the Italian Ministry of Education, Universities and Research (MIUR) and the Italian Ministry for the Environment.



⁹ See examples on the Xplora portal, The European Gateway to Science Education, <http://www.xplora.org/>. [Xplora is a EUN portal – European Schoolnet]; another example is the Automatic Control Telelab (ACT), activated at the University of Siena, <<http://www.dii.unisi.it/~control/act/home.php>>.

¹⁰ See examples on the Xperimania portal, from Molecules to Materials, <http://www.xperimania.net>. [Xperimania is a EUNportal – European Schoolnet].

- Another twinning based on the history of science, for example, an analysis of the events in the 1930s that led to an understanding of the structure of the atomic nucleus, from the discovery of the neutron to that of nuclear fission. The main research centres involved in this “story” were the Cavendish Laboratory in Cambridge (UK), the Institute du Radium in Paris (F), the Phys-Tech. Reichs in Berlin (D), the Regio Istituto di Fisica in Rome (I)¹² and Caltech in Pasadena (CA – USA).

Finally, a couple of suggestions can be made with regard to *Technology*. An eTwinning project could be developed around the construction of an artefact, or the sharing of technological instruments with a common goal to solve a problem or complete a survey.¹³

¹¹ This refers to the European Gravitational Observatory (EGO), the consortium responsible for VIRGO, a gravitational antenna, based on the Michelson interferometer, with a laser light consisting of two orthogonal arms, each 3 km long. See <http://www.ego-gw.it/> and <http://www.virgo.infn.it/>.

¹² The young scientists known as i ragazzi di via Panisperm, led by Enrico Fermi, worked at this institute.

¹³ Consider the paradigm of GRID computing, where a vast number of users can use resources provided by an indistinct number of calculators interconnected through the Web. See http://it.wikipedia.org/wiki/Grid_computing.

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The Use of ICT in the Teaching of Mathematics and Science

by Franco Di Cataldo

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Introduction

What role can new information and communication technologies play in developing mathematics and science teaching? This is an important theme, which is specific to the subjects considered but which also needs to be viewed in the more general context of the acquisition of digital skills in an information society. From this viewpoint, it is worth quoting from the Recommendation of the European Parliament issued in December 2006:

Digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.¹

IST for Education in an Information Society

When computer science was introduced into Italian schools around the mid-80s, with the *Piano per l'introduzione dell'informatica* ('Plan for the Introduction of Computer Science'), science was identified as a privileged sphere for the cross-disciplinary teaching of computing, which was to include both theoretical and practical curricular modules.

The quote from the Recommendation underlines a significant shift in perspective. Digital competence, previously considered as simple ICT or technology management skills, is now seen as IST or information society technology. This means that the acquisition of basic computer skills is directed towards finding, analysing, processing, producing and communicating new information.

In this representation there is a participative philosophy where new competences become the basic tools for participating in information management aimed at the progressive construction of "collective intelligence"² as the characterizing element of information societies. There is an implicit connection to education in this interpretation of technology, in that the Web can be seen as an environment for knowledge integration, where the proliferation of connections and exchanges leads to the emergence of informal modes of learning. In fact, the current Web (Web 2.0³) offers multiple opportunities (such as blogs and wikis, for example) for improving individual products, through the development of connections with the wide range of resources found on the Web, and for engaging with and relating to other subjects operating in the same spheres.

The eTwinning environment is itself a kind of social network, offering tools and sites for teachers and schoolchildren to interact, conduct research and compare ideas in the context of a project-based learning process that involves the sharing of experiences in an international dimension.

¹ *Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning* (2006/962/ec), GUUE L 394/15. The full text can be found in the appendix to this volume.

² P. Levy, *Collective Intelligence: Mankind's Emerging World in Cyberspace*, Perseus, Cambridge, 1997.

³ L. Grivet Foaia, *Web 2.0. Guida al nuovo fenomeno della Rete*, Hoepli, Milan, 2007.

Europe Needs Scientists

Using the eTwinning environment as a data bank for research into on-going project planning, it is possible to note a tendency towards a certain disaffection with regard to the study of science subjects. A brief analysis carried out by Donatella Nucci⁴ in March 2006 shows that only 5% of the activated projects fell into the “Mathematics and Science” category; a subsequent survey I carried out myself in November 2007 revealed a slight rise in that figure, but it was still only 9%.

In some ways it may seem strange that the disciplinary area that it was thought would benefit the most from the introduction of new technologies now seems to be the one benefiting the least with regard to the development of science teaching.

Nucci's article stresses the importance of pupils' initial experiences of science, starting from primary school: “Perception of difficulty, abstractness or boredom during the early phases of one's education has a big impact on student reactions to these subjects at subsequent levels of education .”

The aim of the following sections is to discuss, through a series of concrete example, the role of new technologies in overcoming these three particular aspects: In fact difficulty in arithmetic calculation, abstractness and boredom seem to be elements that hinder student motivation when it comes to learning scientific subjects in all years of study.

Difficulties in Arithmetic and Instruments of Calculation

Today, wide use is made of technological tools ranging from computers to mobile phones, which, thanks to easy information access, are now used as a cognitive aid to memorize data and do calculations.

Although such tools may facilitate arithmetic calculation, care needs to be taken from an educational point of view to ensure that technology is used in a conscious and controlled manner. A premature introduction of the calculator prior to the complete acquisition of basic mnemonic abilities can prejudice acquisition of the ability to exercise the necessary checks and controls on instruments of calculation. This is a fundamental competence ensuring the ability to foresee a possible sphere of variability in the results obtained from an automatic elaboration.

The transition to a systematic use of automatic calculation tools should therefore be carried out in step with a constant autonomous identification of a possible range of variability of the results, which requires a mental capacity for calculation in order to determine the order of magnitude of the studied objects.

Possession of this competence means the student has a sort of self-regulation and feedback tool that checks and reduces the possibility of error.

⁴ D. Nucci, “L'Europa ha bisogno di scienziati”, on the website of the eTwinning Italia webzine, published on 29/03/2006.

The Problem of Abstractness

Very often, in the study of mathematics and science in general, the meaning and relevance of the objects that are constructed and elaborated are not fully understood. This determines a sense of frustration in students, provoked by the perception of a manipulation of unknown objects and the results that they produce. Bruno De Finetti, who belongs to the finest Italian pedagogic tradition regarding the teaching of mathematics, once said that “mathematics seems and becomes arid and tedious only if it is reduced to a passive acceptance of notions, methods and formal practices, leaving its real purpose in shadow”.⁵

Technology can help the teacher who intends to consciously face these problems by providing dynamic simulation environments and virtual laboratories, where the constructed conceptual apparatus can acquire a concrete functional relevance. It is not the tool itself which solves the problem, but the consciousness of student learning problems, a targeted use of the environment and awareness of the pedagogic meaning of precise manipulative interaction activities.

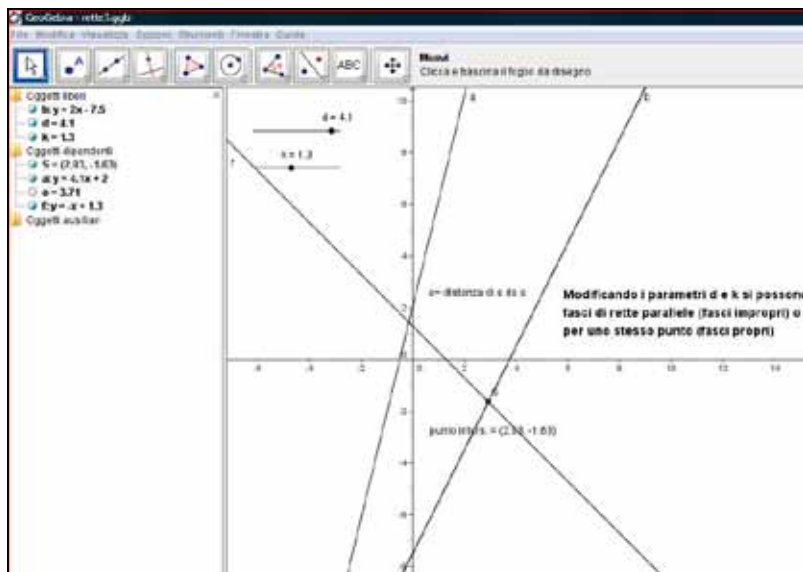
If it is true that there is a playful dimension to the use of these tools, it is also true that, during the course of teaching activities, this dimension must be oriented and limited to the problems in question.

A simple illustration may give a more precise idea. By using Geogebra software it is possible to create a worksheet where certain parameters can be changed to produce a group of parallel or intersecting lines.⁶ The concept of the parameter becomes real in an interactive, dynamic situation, highlighting the fact that a change in a numeric value determines a variation in a geometrical value according to a precise correlation.

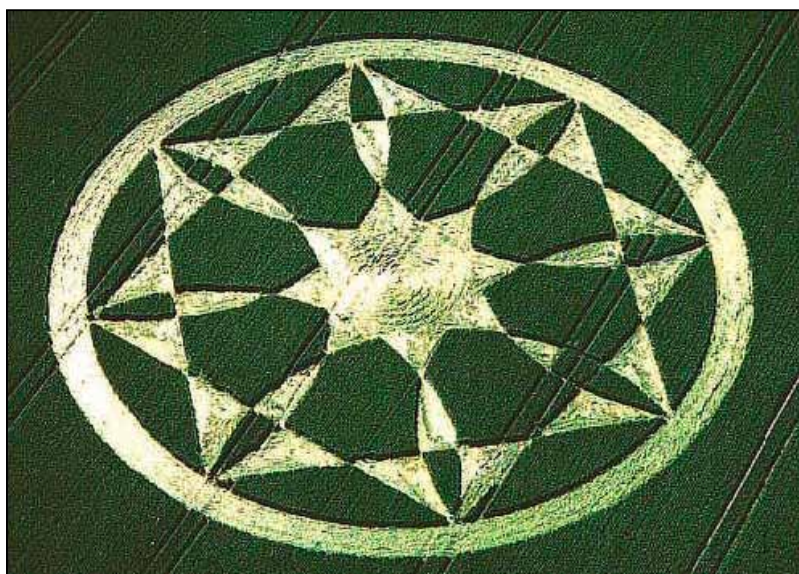
This outline can be used for various problematic situations where an environment is transformed into a laboratory and where object manipulation leads to full comprehension of the character and specificity of those same objects.

⁵ B. De Finetti, *Il saper vedere in matematica*, Loescher, Turin, 1967.

⁶ Geogebra is an open source software downloadable at www.geogebra.org



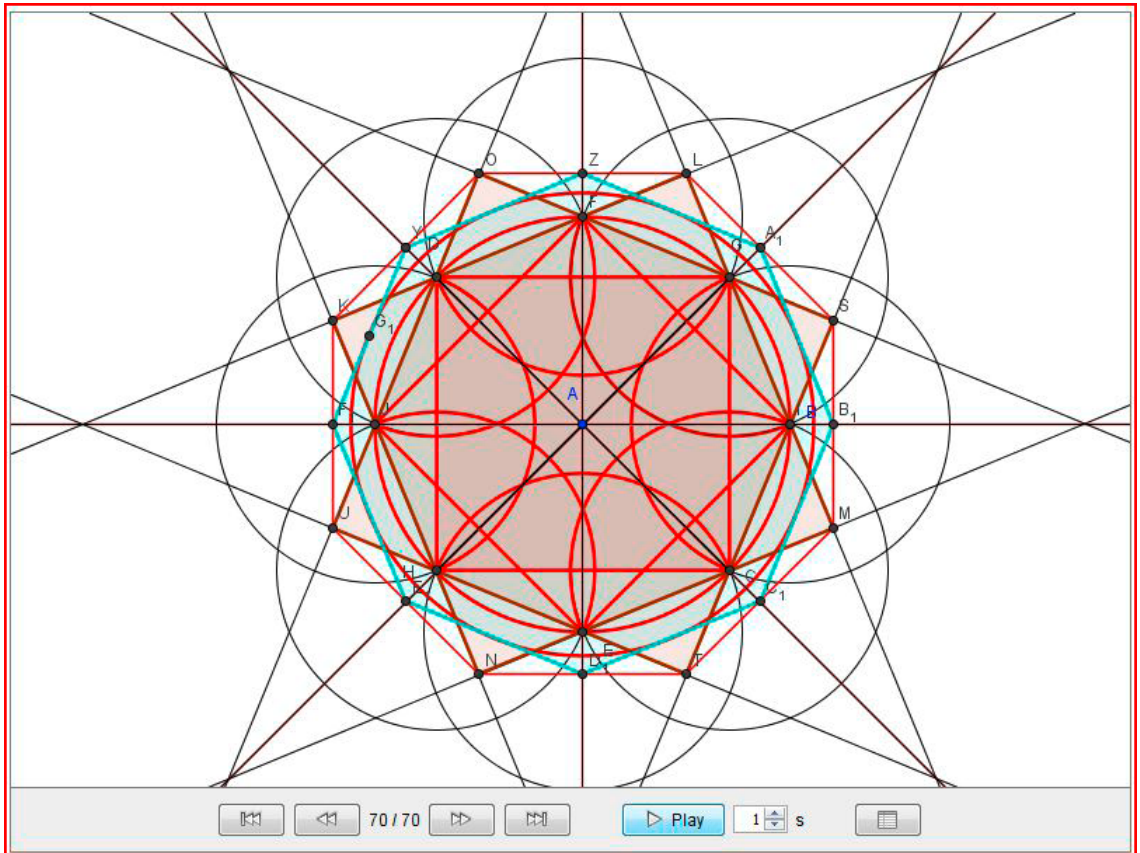
This was the elaboration framework for an interesting collaborative project involving European schools, entitled 'Crop circles challenge – Collaborative maths on the net', which can be found in the eTwinning database.⁷



Starting with the image of a circle of wheat, found on 27 June 2000, in Bishop Cannings, Wiltshire, England, the procedure used to discover the geometric structure beneath the initial image was reconstructed.⁸ Collaboration between the various schools involved a

⁷ The project card is available on the European eTwinning portal, inside the project map, on the home page (select "projects" from the drop-down menu and search text "crop circle"). More information about crop circles was gathered during the project on the website "*Cerchi di grano in Italia e all'estero*" (Crop circles in Italy and abroad), <http://www.margheritacampaniolo.it/Crop_circles_06/news.htm>

comparison of software, methods of approaching the problem, and evaluations, providing a significant added value for teachers and students with regard to teaching activities strictly related to the area of study.



A Further Problem: Student Demotivation and Boredom

The fact that the number of science-related eTwinning projects is so limited is further proof, also on a European level, of how little young people are attracted to these kinds of studies.

There may be various reasons for student demotivation. However, the exacting nature of the subject, an epistemological characteristic of this sphere of studies, can be softened by learning paths that move towards more difficult content in a gradual fashion.

By employing collaborative learning activities, it is possible, though they deal with the conditions surrounding the subject, including those of a qualitative and descriptive nature, to provide students with a stimulating approach to scientific content and methods. Technology encourages the establishment of a learning community where collaboration involves horizontal communication and exchange, and where young people finally feel they can play an active role.

⁸ For further information on the projects see also the article entitled "Ricostruzione di un cerchio di grano. La sfida dei cerchi di grano" by Italian project coordinator Palmira Ronchi, at: http://www.vivante.it/com@net/crop_circle/lessonplan_it.pdf

For a more concrete example, it is worth referring to actual eTwinning projects. Teaching mathematics in a broad cultural dimension and constructing an online magazine is consistent with what has been delineated above. The project referred to here is 'Maths to Play',⁹ which, from its very title, alludes to the playful dimension of mathematics. It involves the exchange of games between students and the search for stimulating solutions using mathematical tools that are quite straightforward but have an original heuristic dimension.



The magazine is a meeting place for a community whose intention is to compare research, study and experience paths. The difficulties met on the way also become a subject for debate, and in explaining and sharing them users can break through the alienating perception of a presumed individual inadequacy.

New Project Planning and Web Resources

The two projects mentioned here as examples of best practices made use, besides the eTwinning tools, of open source software available for free download on the Web (Geogebra) and of free tools for the collaborative production of an online magazine.¹⁰

In reality, there are numerous stimulating environments oriented towards scientific teaching that offer multiple possibilities for new experiences. The ones indicated here are closely linked to the eTwinning platform, but offer an excellent launching pad for further research on Web resources. These resources range from the eTwinning kits¹¹ for the planning of collaborative scientific activities to the Xplora website,¹² which offers a series of experimental activities, documents, information and materials for improving lessons, with the aim of establishing a community of science teachers who can compare and swap experiences and share their resources. There is an online Library providing downloadable resources with relative tutorials, a Megalab with information on experiments available online, a Practice space with best practice examples and an Events area where one can consult experts online. The latter two areas work towards the construction of collaborative working groups. In particular, through the News area, it is possible to participate in an information space to receive news on scientific education in Europe, simultaneously contributing with one's own information on personal teaching experiences.

⁹ <http://www2.edu.fi/magazinefactory/magazines/mathstoplay/index.php?str=40&artCat=0&artID=48>

¹⁰ <http://www2.edu.fi/magazinefactory/>



Conclusion

What has been outlined above refers to an idea of science education that uses a range of tools and phases, where various forms of communication among teachers and students and horizontal communication among students intertwine, both formally and informally. There is a widespread and fairly deep-rooted tendency in pedagogic culture to consider informal moments as being less effective with respect to formal ones.¹³ This is particularly obvious in the case of scientific learning: conceptual tools, algorithmic and technical proceedings require independent thought on the student's part. However, this hardly ever leads to full comprehension of the concept: various linguistic formulations, field verifications and applications, original research on a smaller scale as well as contextualization and expressions in various cultural spheres create the conditions for effective and enduring assimilation.

Even simple emotions connected to an experience in a project can be motivational and help to remove scientific skills from formal, arid contexts, transforming them into an integral part of cultural and educational growth.

¹¹ The kits are available, subdivided by subject, in the section bearing the same name on the European portal. With regard to "Mathematics and sciences, environment and geography," see: 'Tu e la statistica' (Statistics and You) at

<http://www.etwinning.net/ww/it/pub/etwinning/ideas_and_practice/project_kits/mathematics_and_science/statistics_and_you.htm>; 'Lo zucchero in Europa – Addolcisci la tua vita' (Sugar in the EU – Sweeten Up Your Life), at <<http://www.etwinning.net/kits/sugar>> and 'Quattro stagioni' (Four Seasons) at <<http://www.etwinning.net/kits/seasons>>

¹² <http://www.xplora.org/>

¹³ "People acquire competences in everyday life, by talking, observing other people, trying and making mistakes, working with colleagues that may be more or less skilled than they are. In other words, learning is an adaptive process, determined by the need to explore, which takes place in specific contexts of experience. However, our culture leads us to regard these learning forms as being less noble and developed with respect to those explicitly proposed in systems built for the purpose, such as schools, universities and training activities. Yet, there is ample proof, particularly in the sphere of adult education, that formal teaching programmes rarely lead to an effective and enduring learning experience." G. Buoniuti (ed.), *E-learning 2.0*, p. 44, Erikson, Trento, 2006.

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**Project kits for the development of Key Competences in Mathematics,
Science and Technology: proposals from the Seminar working groups**





Think Different: Alternative Energy and Environmental Awareness

Schools involved: secondary

Languages: English, Italian, French

Expected duration: one school year

Age of pupils: 14-16

Subjects: Science, Mathematics, Physics, Law, Computer Science, English, French

Specific Theme

Alternative energy sources and the environmental impact of goods traffic

Brief Description

This research and study project is about alternative energy sources and the environmental impact of transporting goods by truck. Particular emphasis will be placed on analysing – with a degree of scientific complexity appropriate for the pupils' level – a specific theme such as photovoltaics and free energy.

Science lessons will be held in at least two common languages: English, which is the customary language of scientific research and is hence an invaluable tool that needs to be acquired; and another lingua franca to encourage multilingualism.

Objectives

To acquire and share up-to-date information about the current situation regarding alternative energy sources, and to create civic awareness of the environment in a European dimension.

Envisaged Processes and Activities

Research, statistical processing, environmental impact studies, hypotheses regarding environmentally sustainable solutions, issues to put to research bodies and experts in the field. All the activities should involve an exchange of ideas between the various partner countries, so as to build up a common framework. Reference will also be made to the state-of-the-art of European research (centres of excellence in the Union, projects and thematic networks) in order to strengthen the European perspective at school.

ICT Tools Used and their Purpose

- Personal productivity software (data gathering and processing, etc.)
- Shared on-line blackboard (brainstorming, comparison of ideas, collaboration, etc.)
- Email, blogs, forums, chat sessions (communication)

Expected Results

- Greater pupil awareness about eco-sustainability
- Forming of environmentally aware consumers

Final Outcomes

- Web site
- Publication of statistical research
- Video
- 'Ten Commandments' for the environmentally aware consumer
- Project journal

Documentation

- Project web site and links on the sites of the partner schools
- Public TwinSpace and progress cards
- Meetings with experts publicized in the local press and open to the local community
- Involvement of the local authorities in the final event

How green are you?



Schools involved: secondary

Age of pupils: 14-18

Language: English or another foreign language

Expected duration: one or two school years

Subjects: Science, Mathematics and Physics, History and Geography, Foreign Languages, Law, Computer Science and Electronics

Specific Theme

The environment and recycling

Brief Description

The idea is to carry out scientific experiments in order to promote ecological awareness. Recycling and differentiated rubbish collection, the utility of packaging and the impact on the environment, plastic and possible alternatives, carrier bags and the old fabric shopping bag – these are all themes touched on when probing the degree of awareness about personal practices regarding the environment and its conservation. In some countries this awareness has already become integrated into everyday habits and ecological measures have been in place for years, to the extent that they are now viewed as common solutions (for transport, rubbish disposal, traffic congestion). By contrast, in other countries such a “green” mentality is totally absent. It is envisaged that the project will involve both kinds of families, so as to encourage comparison and reciprocal learning, the sharing of effective solutions and an understanding of diversity. In order to involve the partner schools, emphasis can be placed on the need for a shared action plan spanning different nations – because the environment is both a local concept and a more extensive one – and of the central role of ecological education at school. The goal is therefore to put together a project proposal that highlights interest in environmental issues but at the same time valorizes the desire for integration between all the scientific and mathematical disciplines. This will help to bring together ecologically aware teachers but also those interested in teaching sciences in compliance with European guidelines.

Envisaged Processes and Activities

Gathering of information about domestic and local council ecological initiatives, data and percentages regarding rubbish collection and its end use in the cities of the twinned schools. Devising of awareness-raising activities and a survey on the theme, conducted by the pupils and directed at the rest of the school, with the use of technology to make materials accessible online and available to the partner schools.

Objectives

- To improve scientific and technological competences
- To learn to work and plan in an environmentally conscious way
- To stimulate critical skills and powers of observation
- To develop communicative competence in L2
- To improve the use of ICT tools (chat sessions, forums, email, VoIP, Marratech)
- To do group work

ICT Tools Used and their Purpose

- eTwinning Platform and web pages for publications
- email, chat, forum and other tools for communication and collaboration
- platforms for e-learning and distance collaboration (Interactive Board, virtual classes etc.)

Final Outcomes

- Devising of an information campaign for peer groups and/or families
- Section devoted to the project on the school's website, put together by the pupils
- CD-ROM with all the gathered materials, to be distributed during a final event, if there is one

Expected Results

- Full achievement of all set objectives

Documentation and Dissemination

- Publication of gathered environmental data (eTwinning platform, school website, CD-ROM, local papers)
- Publication on the website and the public TwinSpace of the results of the survey and of all the materials produced
- Organization of information days open to the public
- Local newspapers



Mathematics in Reality: Simulation of Everyday Activities Management and Problem Solving

Schools involved: secondary

Languages: English, or some other according to choice

Expected duration: 6 months

Age of pupils: 15-16

Subjects: Mathematics, English, Science, Physics, Italian

Specific Theme

Problem solving, logical thinking, dealing with everyday problems of calculation and measurement.

Brief Description

According to the OCSE PISA survey, the school system is experiencing difficulties in mathematics and the sciences, due to a lack of involvement and interest on the part of schoolchildren. There is a need, then, for activities capable of establishing a tangible and exploitable relationship between the basic curricular subjects and the implicit mathematical tasks we carry out everyday, first and foremost the so-called problem-solving activities. The aim is to transform abilities learnt at school into competences that are perceived to be useful in everyday life. The simplicity of the proposed simulations will train pupils to solve increasingly complex problems, and will help orient science teaching towards the competences laid down by the European Union.

Envisaged Processes and Activities

Starting from a simple idea, from everyday situations that pose problems of one sort or another, pupils cooperate to find solutions. Both the positive and negative aspects of all the proposals are highlighted. Various scenarios are possible, ranging from the most common to ones relating to geometry (for example, taking measurements without instruments, a practice for which one can resort to the experience of craftspeople and grandparents). Class activities will alternate with sessions with the partner schools in order to come up with and discuss ideas, possible solutions but also problems and anxieties associated with studying the sciences. Mini competitions and virtual games will also be organized between the partner schools in order to further stimulate a positive approach to mathematics.

Objectives

- To become capable of identifying and solving everyday problems concerning the use of basic mathematical and scientific competences
- To master mathematical and scientific skills
- To apply the problem-solving methodology to everyday life and to stimulate logical thinking

ICT Tools Used and their Purpose

- Email, Skype and the eTwinning portal

Expected Results

- Greater familiarity with the technology used and the development of a cooperative attitude
- Development of problem-solving strategies an awareness of the relationship between mathematics, science and reality

Final Outcomes

- Outcomes of the activities include the production of files and materials, the collection of data, the production of graphs and charts, etc.
- A final catalogue will be produced containing all the solved situations and a consideration of the methodology adopted in the solution

Documentation and Dissemination

- Involvement of the whole school during special information days
- School website and public TwinSpace
- Other possible online publications (blogs, wiki, websites)



Our Creepy Housemates

Schools involved: primary and lower secondary

Age of pupils: 8-14

Language: English, Italian

Expected duration: one school year

Subjects: Sciences, English, Images, Computer Science, Geography, Mathematics

Specific Theme

"Domestic" insects

Brief Description

The insects that populate our homes all belong to the animal kingdom and can provide a useful starting point for some fascinating scientific research. Pupils learn about and analyse their behaviour, the species and families they belong to, and their interaction with the domestic environment and with climatic and geographic factors. Moreover, given that they are effectively domestic insects, since ancient times they have cropped up in dialects and in everyday language. Various words, definitions and onomatopoeic terms that have perhaps fallen into disuse in more modern times are worth rediscovering. The aim of the project is to learn how to organize a scientific investigation correctly, which is then accompanied by research into dialect expressions, children's rhymes and proverbs associated with domestic insects.

Objectives

- To stimulate interest in scientific study through a growing awareness of the close tie between science and everyday reality
- To learn how to organize a scientific investigation correctly

Envisaged Processes and Activities

Discussion and sharing of investigative and data collection methods (webquest, etc.); the collection, processing and exchange of data; an environmental impact study; lexis and etymological research; sessions with experts (for example, from the local health authority).

ICT Tools Used

- Data acquisition tools: digital cameras and/or video cameras, scanner
- For meeting and communicating: email, chat, blog, TwinSpace, webcam
- Various software (presentations, word processing, image/video processing, spreadsheets)

Expected Results

- Learning and/or perfecting of scientific method
- Cooperative learning
- Broadening of vocabulary (languages involved)
- Improvement in the use of TSI

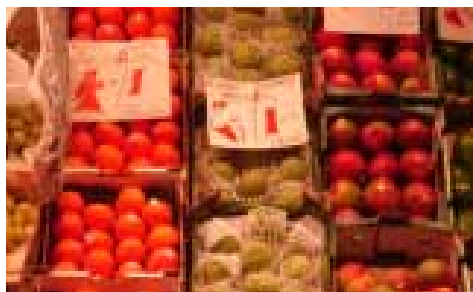
Final Outcomes

- Blog and/or project website and public TwinSpace
- Information materials for families and the rest of the school
- Video/documentary

Documentation and Dissemination

- Blog, school website and TwinSpace, in order to make the outcomes visible (presentations, graphs, tables, etc.)
- Posters and information materials to distribute to families and the local community
- Photos and videos to post on line or to display in the course of public events

Know your Flavours!



Schools involved: primary and lower secondary

Age of pupils: 9-12

Specific Theme

Eating habits

Brief Description

The aim of the project is to investigate the range of flavours and foods present in our culinary tradition and in that of our partners, in order to identify similarities and differences. This research will be complemented with information about nutrition, the diffusion of products in given areas, and geographic and climatic factors. Cultural traditions and socio-economic aspects relating to food will be analysed and compared with the scientific point of view so as to develop the ability to draw conclusions from proven facts and to show how apparently distant but actually strongly interrelated factors can determine the cultural physiognomy of a people. At the end of the project it is envisaged that there will be a specific activity designed to simulate an invitation to breakfast, in order to give tangible form to the investigation of kinds of food in the countries involved.

Objectives

- To discover, learn about and appreciate diversity whilst respecting one's own identity
- To become more open to other cultures
- To learn how to communicate effectively
- To reflect critically upon personal eating habits
- To develop a scientific approach to research and the analysis of reality, and to learn to make connections between information and knowledge so as to draw firmly grounded conclusions
- To improve language and technology skills

Expected Processes and Activities

Presentation of the class and individuals, and geographic identification of the partner countries. Statistical investigation from social, economic and cultural points of view. Collecting of stories, songs, rhymes and proverbs relating to food and diet. Practical, hands-on activity to produce a typical breakfast and accompanying recipes.

Languages: English, Italian

Expected duration: 6 to 12 months

Subjects: Italian, Mathematics, Computer Science, Sciences, Geography, Music, History, Art and Images, Foreign Language, Citizenship, Religion

ICT Tools Used and their Purpose

Email for communication, word processing and spreadsheet programmes for documenting the statistical investigations, Movie Maker and digital recording for the production of films, Paint for the drawings and PowerPoint for presentations.

Expected Results

Expected results range from getting to know the partners to the organization of a virtual and/or real exchange of hospitality.

Final Outcomes

The invitation-to-breakfast theme (realized by means of an exchange of products) will serve as the inspiration for a shared website, posters and leaflets. These will be used to organize a "promotional/information campaign" about different foods and cultures. Starting from the breakfast, the various sections of the site will detail the research findings, evaluations and investigations.

Documentation and Dissemination

- Involvement of the whole school and of the local community during the "promotional campaign"
- On-line publication on the project's website, on those of the schools and on TwinSpace



A European Snack

Schools involved: primary and lower secondary

Age of pupils: 3-13

Language: English and Italian

Specific Theme

Statistics and culinary habits

Brief Description

The aim of the project is to compare pupils' habits and preferences regarding a fixed part of the daily routine of all the twinned classes – morning snack time at school. The idea is to valorize diversity, stimulate observation of and curiosity about other realities, to inform others about nutritional aspects and to be able to mount statistical surveys. The chosen theme will be explored by carrying out all the phases of a genuinely scientific research project about food, touching also on the socio-cultural implications. The steps involved include the formulation of hypotheses, the gathering of data and their processing to support the conclusions that emerge. What does the snack consist of? What are pupils' preferences in the various partner schools? Are the snacks prepared at home or bought? What ingredients are used and how nourishing are they? These are just some of the possible guideline questions.

Objectives

To encourage the ability to develop and apply mathematical thinking to solve a series of problems in everyday situations.

Predicted Processes and Activities

Interviews, statistical surveys, the writing of short texts in English, preparation of flow diagrams and graphs. Emotional approach, talking about oneself, autobiography, reading of stimulus sentences, cues for curiosity. Preparation of a snack customarily eaten in a partner country, to be offered to pupils in other classes. The older pupils will use a blog to facilitate communication and cooperation, resulting in greater interaction.

Expected duration: one school year

Subjects: Interdisciplinary

ICT Tools Used and their Purpose

Blog, website, forum, word processing and spreadsheets, internet for research

Expected Results

- Improvement of scientific and mathematical abilities
- Valorization of diversity
- Improvement in language skills

Final Outcomes

- Blog with recipes and the scientific findings of the surveys
- Website with various different sections dealing with the themes dealt with year by year
- Podcast for the interviews, video podcast to document the snack
- Multimedia CD

Documentation and Dissemination

- Public TwinSpace and blog
- Handing out of questionnaires and feedback on the results to all concerned parties
- Involvement of the whole school in preparing and consuming a "snack"



The contribution of eTwinning to the development of Key Competences: Social and Civic Competences

Definition of the European Recommendation, December 2006

“These include personal, interpersonal and intercultural competence and cover all forms of behaviour that equip individuals to participate in an effective and constructive way in social and working life, and particularly in increasingly diverse societies, and to resolve conflict where necessary. Civic competence equips individuals to fully participate in civic life, based on knowledge of social and political concepts and structures and a commitment to active and democratic participation.”

The Web and the Social Construction of Knowledge

by Anselmo Grotti

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If only I could trace paths inside my head
to stimulate an inner trade among my supplies of thoughts.
Instead, they lie there in their hundreds, without being useful to one another.

George Christoph Lichtenberg

What do “historical and social knowledge” and “citizenship education” mean in relation to digital technologies? In order to remove any form of misunderstanding, it should be stated that it is not a question of using digital technology as a simple “aid” to talking about citizenship, but rather of finding, in the very heart of their characteristics, the most suitable way to valorize the virtuous circle between acts of citizenship and cultural reflection about those acts. Digital technologies and the Web are potentially a “place” where individuals live, have experiences and are shaped as European citizens. Digital competence is crucial for social inclusion.

There are, of course, many difficulties. Perhaps it would be worth starting from some data, which, however, are little source of comfort for Italians.

A Challenge for the Country, a Challenge for Cross-generational Communication.

A lack of basic competence in the correct use of online interaction has become a limitation similar to not knowing how to read or write in the past. There is even the risk that the right of citizenship may be undermined, almost as if a person no longer had the right to vote or to an informed, conscious and democratic participation in social and political life.

Digital citizenship is a fundamental right and is indispensable for economic development. Unfortunately, Italy ranks eighteenth in the UE (ISTAT survey, 2007) when it comes to internet connections. The digital divide is the gap between countries that are in the information and knowledge circuit and those excluded from it. Digital disconnect is the gap between adolescents with highly developed computer skills and adults, including parents and teachers, who lack familiarity with modern technology.

A Challenge for Social Justice

There is an increasing gap between the technological assets owned by families in which the head of the family is a manager, entrepreneur or professional and those in which the head of the family is a worker: the gap in the ownership of broadband internet access rose from 21.6 to 29 percent in one year. This is more of a social-cultural problem than an economic one. In Italy, mobile phone ownership figures for the two categories are comparable. Strong advertising pressure to buy electronic goods and a lack of awareness have shifted attention from education to entertainment.

It is vital to make every possible effort to reduce the gap and to promote social inclusion. Schools must be able to provide not only students but also their parents with digital competence and cultural awareness. Otherwise we risk a serious deterioration in the social fabric, and the very existence of democratic citizenship is threatened.

Increasing Quantity and Quality

The quantity but above all the quality of internet access must be increased. Adolescents and young people go online without being aware of the characteristics of the internet. In

these circumstances they can easily become victims of crime or even, with a greater or lesser degree of awareness, the perpetrators of crimes. Privacy is a fundamental right people are often not aware of, particularly internauts. Recently, the privacy guarantor stated that data on the internet have a life of their own, with no rules and no possibility of predicting all the purposes and all the contexts in which they will be used. In fact, people are often unaware of just how much information they leave behind them when surfing the net or using internet services. Websites and search engines automatically make a record of user data, which can then be collated for rather disturbing user profiling purposes.

Schools have an essential educational role in encouraging a responsible use of technology. Without digital competence we are only half-citizens.

Context

- key competences for lifelong learning (Recommendation of the European Parliament and Council, 18 December 2006)

- learning by way of competences

Objectives:

- digital competence

- new organizational and teaching solutions

- integration of collaborative learning activities in person/on the internet

Sharing Thoughts/Producing Knowledge

As Kant authoritatively wrote, free thinking does not take place in the absence of the free communication of thought. Themes regarding methods of communication, the relationship between information and supports, and access to knowledge are strongly intertwined with philosophical thinking. Information ethics, intellectual copyright, syntactic and/or semantic reproducibility of thought, brain frames and structured or “liquid” knowledge (Baumann) make for privileged access from a teaching and educational viewpoint. Sharing thoughts is not just an act of distributing what already exists, but also becomes a creative act that produces new thought and knowledge.

In order to obtain these results, an explicit and conscious reflection on certain fundamental aspects is required:

- Writing models and learning models

- Modification of cognitive styles

- Cultural awareness of digital communication

In particular, it must be acknowledged that the conscious and responsible use of digital technology presupposes the identification of three fundamental characteristics of the Web:

- Internet as a resource

This concerns the simplest and most widespread perception of the internet. The huge dilation of cognitive space also entails an increasing need for critical discernment. First of all, it is important to learn how to conduct a search, but also the way in which criteria settings can lead a certain service to a certain result rather than another. One must be aware of the varying degree of reliability of sources, the need to respect intellectual property and the correct way to quote a digital source. Finally – sticking to just the most important aspects – it is crucial to know how to archive information, organize it efficiently for one’s own purposes and how to make it available in a kind of customized and/or shared data base.

- Internet as an object of study

There is less perception of this aspect, yet it is more important than the first.

Communication is a technology: from the human voice to writing, from printing to ICT (Information Communication Technology). This technology is capable of interacting with perceptions of the world, history and human relationships. Children grow up in a different world when they are exposed to a continuous interaction with technology, and adolescents build their self-image according to new processes when they explore the lifestyles and behaviours immersed in the nebula of the mass media. Political and cultural opinions are organized according to new perspectives when there is a transition from meetings in public squares to television talk shows or blogs on the Web.

- Internet as a tool for cooperative learning

One of education's main goals is to encourage perception of the social nature of human coexistence. Technology has the advantage of "making visible" the process whereby knowledge is organized and its representation "objectivized". This process began with the dawn of humanity, but it has recently assumed specific characteristics through the emphasis on technological support. The effect of learning to work on the Web according to cooperative models is that the prerequisites, the context and methods of interaction, become explicit, and therefore controllable and more efficient. Such methods are also present in ordinary contexts of course, but they often go unnoticed and are neglected. Working on the Web means realizing the crucial importance of the "phatic" function of language, the primary need to open a channel of communication with other people.

How can knowledge be communicated and shared? What are the main phases that have been traversed in the various cultural processes that have led to the current educational and social system? What is happening in the Web era? What has happened to communication methods and what spaces are opening up for citizens today, who are not just traditional but also digital?

Cultural Choices and Technological Choices (George Bernard Shaw's Apple and the Homonymous trademark...)

Digital technology is compatible by definition: contents can easily travel – potentially at least – from one support to another. But we must be careful: knowledge sharing, made possible through technology, could be hindered by marketing interests...

A simple example can illustrate this. For a few euros, we can buy a USB standard connection cable anywhere, even in a supermarket. It can connect an external disc, an mp3 reader, a flash memory device to any computer... and so on. Information is frictionless, passing from one support to another without any difficulty whatsoever. The brand name of the support is not important, nor if the disc is very fast or if we are dealing with a static memory. It does not matter which freely accessible online programme we use to listen to audio files or watch video files or read text.

Now consider another USB connection cable with a famous apple trademark. On one end, we find a standard connection, which, as mentioned above, can be connected to any computer. However, the other end holds a surprise: the connection is completely different and can only be used on the support that is produced exclusively by the company with the apple trademark. Is this perhaps due to technical reasons? Is a new and better standard being proposed?

The answer to both questions is no. There is no technological reason to change the connection. Electric power and data flow into a USB cable, but this takes place at both ends.

There are, however, many commercial reasons for producing a different connection. In order to connect the device to the computer port we are obliged to use not just any cable, but that one. We become "loyal" to the company. The software we use to manage

audio and video pieces is specific. A simple operating system “copy and paste” is not enough.

The USB cable is of course a metaphor, but it points to a significant problem. The Web represents an extraordinary exception with respect to market logic. Thanks to the adoption of connection standards, the type of computer we use, the brand name and within certain limits, its performance, the operating system, the browser we use to surf the Web or the email provider we choose is not important. As an inverse example, take mobile/cell phones: not just each brand name, but each model belonging to the same brand has a different battery size and different connections. Therefore, we are either forced to pay a high price for a specific battery or buy a new cell phone. Even headphone connections are different and not standard. Yet, each battery only produces electric tension and the audio signal is the same.

In the case of mobile phones, the problem, albeit a serious one, involves only an unjustified increase in consumer costs and dangerous environmental pollution, as well as the nuisance of having too many objects in our homes without having the right one when the need arises. Whereas, in the case of digital communication, the problem is much more serious. The example of the two cables is a paradigm for a dramatic choice between two models of society.

Communication computer technologies hold certain risks, but they also provide new opportunities and potent support for the spread of knowledge. For simplicity's sake, we can limit ourselves to a single case, namely podcasting. It is possible to legally download not just music, but texts, conferences, lessons, university courses and so on from the Web. In Italy, RadioTre Rai plays a commendable role in this area. In other cases, certain university lecturers make their lessons available online through podcasting. In the USA, universities such as Berkeley make available, free of charge, not just audio but also video podcasts of the lessons given in any faculty.

If we decide to adopt the paradigm of the standard USB cable, we will be able, for the first time, to spread knowledge at practically no cost. If the paradigm of the “apple” cable is imposed upon us, we will be placing obstacles in the way of the free circulation of thought and knowledge, which, for the first time, is not justified by technical needs. In the past there were intrinsic system limitations. What was on a Babylonian slab could only be made known by physically moving it. An analog data recording requires a specific reader: film slides need a projector, vinyl discs need a record player, VHS cassettes need a video-recorder, and so on. A digital recording, on the other hand, “transits” from one device to another, arriving from the Web through a cable or a radio and can simply be stored on an internal or external disc or loaded onto a small mobile reader at a very low cost.

The Social Construction of Knowledge on the Web

Making knowledge “visible” enables it to be shared, thereby permitting not only the diffusion but also a significant growth in that knowledge. The same thing happened with language, which made civil coexistence possible and helped the human mind become conscious of its own existence. Writing and printing are other cases in point. And so is the Web. However, there is a difference: “analogic” systems entail a strong link between information and support, while “digital” systems enable the large-scale distribution of data, which can migrate to different supports. This creates a form of knowledge that emphasizes relations between different pieces of information. A network of links connects web pages, blogs, images, videos and audio pieces, as well as subjects, avatars, correspondents etc. Naturally, not everything is clear, positive, useful or wonderful. But the new scenarios are extremely interesting: It is now possible to read, listen to and view what was said in a conference, in a public event, in a statement. It is possible to compare, verify, criticize.

And it is possible to build knowledge, research, a project in a cooperative way. Moreover, it is possible to create social connections, and for there to be interaction between a live meeting and others online.

All of the above is not automatic. Not for people, who need to dedicate time, attention and education to arrive at a conscious use of the Web. Nor is it automatic for organizations. Recently, it was reported that a large Italian television network is demanding 500 million euros from YouTube and Google, claiming rights on certain videos they have aired. It is a depressingly clear sign of the cultural abyss that separates broadcasting media managers from reality, but is also a legitimate cause for concern: what will happen to the Web if it is subjected to the same logic applied to television?

George Bernard Shaw once said: "If you have an apple and I have an apple and we exchange apples, then you and I will still have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas."

Assets can be classified into "pie" assets (the more slices you cut, the thinner they are) and "knowledge" assets (sharing can produce further knowledge and certainly does not reduce it). "Pie" assets are already badly distributed on the planet, so much so that we go to war to defend or increase the size of our slice. "Knowledge" assets, which are what concern us here, have unprecedented potential: they can be shared without being divided. Unless, that is, they are not forced, through technological artifices dictated by a strong marketing logic, back into the "apple" category (not just the one referred to by George Bernard Shaw, but also the one designating the famous company)...

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Civic and Social Skills and Education for Citizenship: A Silent Interaction

by Marilena Beltrami,

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No man is an island entire of itself; every man
is a piece of the continent, a part of the main;
if a clod be washed away by the sea, Europe
is the less, as well as if a promontory were, as
well as any manner of thy friends or of thine
own were; any man's death diminishes me,
because I am involved in mankind.
And therefore never send to know for whom
the bell tolls; it tolls for thee.¹

No Man is an Island, John Donne, 1624

When speaking of civic and social skills in today's world, it is essential to consider the role of a person who is required to communicate and engage with, as well as relate to, communities and contexts that are becoming increasingly heterogeneous, both in formal and informal spheres.

The challenges posed by the 21st century have repeatedly highlighted the complex, dynamic, mobile and global nature of today's reality. This often worries and disorients people, because they are constantly required to deal with a multifaceted world that is changing and redefining itself at tremendous speed.

It comes as no surprise, then, that in its Recommendation of December 2006,² the European Parliament encouraged Member States to promote the development and acquisition of key competences³ in various spheres of learning, so as to equip citizens with the resources they need to interact in a conscious and responsible way in the various communities within which citizenship can be exercised.

In order to grasp the reasons that led the Parliament and the Council to move in this direction, it would be useful to analyse and trace the evolution of the notion of competence, and to concentrate in particular on the nature of the civic and social competences that are the primary focus of the present work. There is an extensive body of literature about the concept of competence, and a wide range of different definitions have been proposed,

¹ J. Donne, “Meditation XVII”, in *Devotions upon Emergent Occasions: Together with Death's Duel*, Echo Library, Teddington, 2008.

² Recommendation of the European Parliament and of the Council of 18 December 2006 on *Key Competences for Lifelong Learning*, (2006/962/ec), GUUE L 394/10 on 30/12/2006. The full text can be found in the appendix to this volume.

³ A significant analysis was made by Anna Maria Ajello (Ajello, 2002), (Ajello, 2000) and Flavia Marostica (Marostica, 2003). As regards the international panorama, the recent OECD executive report (OECD, 2005) is an essential starting point.

though similarities and convergences do exist. The word ‘competence’, which together with ‘knowledge’ and ‘skills’,⁴ has been used with a certain frequency since the 90s, has become a core notion in debates on learning and formal/informal education, shifting the focus of the educational process onto the learner and away from the knowledge and content typical of a linear and sequential learning approach.

Within this context, it is important to bear in mind the new scenarios opened up by communication and information technologies, which have had a big impact on our views of knowledge and how it can be acquired and used. The attention of learners and – from a lifelong learning perspective – of citizens in general, has been directed towards the ability to select, evaluate and reorganize information to satisfy specific needs. Consequently, the spatial and temporal parameters of interaction within the educational process as well as in the professional spheres of our era have also been redefined.

The critical debate on competences has therefore centred on the way in which people operate within these knowledge construction systems and how this knowledge can be used to support the empowerment that should help students and citizens alike to self-regulate their plans in life. This is in order to put them in a position to solve problems, participate in projects, negotiate to resolve conflict and operate both individually and cooperatively, participating to the full in the life of the various communities they belong to and actively exercising their citizenship.

Today more than ever, educational and pedagogic research needs to reflect on how each single individual can be equipped with the ability to activate all their acquired knowledge, abilities and skills, guided by an intrinsic motivation, by values and critical thinking, as well as by the convictions that lie at the basis of the choices he or she makes on a personal and social level. In short, research must focus on the way in which individuals acquire and deploy their competences to act, live and relate in a world characterized by discontinuity, dynamism, and mobility, where forms of interaction extend beyond any kind of disciplinary or geographical boundary to effectively deterritorialized spaces such as the Web, blogs, forums and wikis.

A fine illustration of how to overcome disciplinary boundaries is given by E. Morin in one of his story-essays, a striking account of his path to education:

My personal culture was never inward-looking. I built it starting from problems that are common to us all, using my skills and curiosity. I did not build it by way of accumulation, but by focusing on different, multiple approaches; instead of summing up all the strategic-cognitive knots that presided over the fusion points of what is kept separate, I stripped them to the bone: in this way each one of us – in other words, everyone, but above all, myself – could avoid the blindness that comes from the fragmentation and ignorance caused by disciplinary boundaries.⁵

The accumulation of a series of notions and knowledge is no longer enough, then, to tackle the complexity and contradictions of the present. There is a need for key

⁴ Consider the following definitions from [*Conoscenze, Abilità, Competenze*] (Knowledge, Ability, Competences) [anonymous], on the Website of *IC Filis di Terni* [a teaching unit], <<http://www.defilisterni.org/2008/innovazione/competenze.doc>>, consulted on 21/08/2008:

Knowledge: *founding nuclei of essential knowledge-disciplines.* **Abilities:** *the ability to use and master knowledge in general as well as to complete tasks and solve problems.* **Competences:** *the ability to use knowledge, abilities and personal skills in study or work situations.*

⁵ E. Morin, 2004, p. 50.

competences that can open doors and build bridges capable of breaking down the borders on which a strongly hierarchal social organization was based, where knowledge seemed to take little account of an intersubjective structure.

So what are the new educational and training requirements that have highlighted the role played by competences?

In Gert Jan Hofstede's words, today more than ever, individuals need "new mind software"⁶ to take them through new territories of experience and learning. Sometimes arduous but often gratifying, these territories have never been fully explored. Here, individuals in a community listen to each other, work, compare ideas and relate to build new spheres of sociality, work, cultural and social exchange and reciprocity, which lie at the basis of intercultural interaction, the vehicular language par excellence of a new global reality. It is, then, a sphere of action where the individual is simultaneously the host and the guest, and where relationships are the main focus.

This notion also informed the recent Italian curriculum guidelines, where the need to perceive schools as a social space is clearly stated:

The renewal of education cannot take place merely through the implementation and application of directives and decrees, imparted from above and imposed by regulations. The nature of teaching/learning processes itself excludes this, as they can only be fulfilled within highly complex relationship dynamics, where educators are allowed extensive professional independence.⁷

It is within the complexity of all these new dimensions and situations that citizens can build, transform and dynamically redefine the multiple identities of their background. The acquisition of key competences, especially civic and social competences, will prove indispensable for communicating, understanding, searching for and rediscovering, individually and collectively, new meanings, spaces and values – even through negotiation and conflict – according to a democratic vision of existence respectful of rights and diversity.

Acting within a community, citizens will therefore learn to understand the sense and meaning of complex situations they had never imagined or experienced before. And if, at the beginning, such situations might have caused contradictory feelings like attraction and fear, provoking a sense of alienation or rejection, citizens will now be able to consider these experiences as an added value of human existence and action. At the same time, discovery and awareness of these potentialities will strengthen their self-esteem and capacity to operate independently.

The reasons and considerations illustrated so far prompted national and international bodies⁸ to take an interest in competences, particularly in the identification of key

⁶ G. Hofstede, 1994.

⁷ Italian Ministry of Public Education, *Indicazioni per il curricolo per la scuola dell'infanzia e per il primo ciclo d'istruzione* (Curriculum Indications for Nursery Schools and the First Education Cycle), Rome, 2007, p.8.

⁸ See the PISA Programme (Programme for International Student Assessment), an international survey promoted by the OECD, to check the skills of educated fifteen-year olds in the areas of reading comprehension, mathematics and sciences, and the "*Regolamento recante norme in materia di adempimento dell'obbligo di istruzione*" (Compulsory Education Regulations and Provisions) and relative annexes, M.D. 139, issued on 22 August 2007.

competences deemed “necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society”, and therefore useful to everyone. Devoting particular attention to active and preventive measures for the unemployed and inactive, the Recommendation stressed the importance of supporting Member States in

ensuring that their initial education and training systems offer all young people the means to develop key competences to a level that equips them for adult life and which forms a basis for further learning and working life and that adults are able to develop and update their key competences through the provision of coherent and comprehensive lifelong learning.⁹

Thus, if schools wish to play a significant role in the construction of knowledge and competences that promote inclusion, democracy and the participation of future citizens in the governance of the various communities they are a part of, they must take stock of the transformation that is taking place and make educational proposals that respond to the challenges of post-modern society and the requirements of local, national, European and global institutions.

Back in 1997, the OECD launched the DeSeCo programme (Definition and Selection of Competencies), in response to growing interest in the impact of the results obtained by the various education systems, with the purpose of supplying a theoretical and conceptual basis for defining and selecting key competences and simultaneously for laying the foundations for the development of statistical indicators of individual competences, and such like. The programme was also intended to become a point of reference for the statistical interpretation of teaching and learning results, in order to promote critical debate about which skills were to be considered a priority in the new curricula. This objective was achieved, drawing a practical response in various educational fields.¹⁰

This debate is proving to be lively and fruitful. Daily school life in various contexts, the construction of networks between schools and institutions, the requirements of the local area and community, and the need for integration are fertile terrain for schools to intervene and acquire a role as a service provider for the community. They can experiment with new learning paths in the ambit of Education to Democratic Citizenship (EDC),¹¹ for which civic and social skills are essential prerequisites.

Following a long period in which reflection about social action and civic education was rather unfashionable in scholastic contexts, EDC has now become a frequent topic of debate. There are many reasons for this neglect in the past, including the erosion of the welfare state, reduced participation in politics, electoral apathy, the failure of cooperative policies and the demands of ethnic and cultural minorities.

Also invoked in recent ministerial documents,¹² EDC is intended to respond to new challenges such as globalization, the reduction of political space, active citizen participation

⁹ *Recommendation 2006, op. cit.*, enclosure, art. 6

¹⁰ DEELSA, “Definition and Selection of Competences (DeSeCo): Theoretical and Conceptual Foundations”, 2002

¹¹ EDC (Education for Democratic Citizenship), cf. <http://www.coe.int/t/dg4/education/edc/default_EN.asp>

¹² “Lettera ai Presidi del Ministro Fioroni” (Italian Minister Fioroni’s Letter to School Principals), 3 August 2007” and “Technical Document and Relative Annexes” in *Il nuovo obbligo di istruzione: cosa cambia nella scuola* (New changes in compulsory education), edited by the Ministry of Public Education, M.D. no. 139 issued on 22 August 2007.

and the need to become multilingual and digital citizens, to mention just some aspects that show how EDC envisages a transversal, cross-disciplinary teaching and learning dimension and invokes the adoption of key civic and social competences.

EDC means inclusive, multilingual, dynamic and interactive education, because as John Donne says, ... every man is a piece of the Continent, a part of the main.

Civic and social competences involve various aspects (cognitive, emotional, motivational, attitudes and sense of values) and reveal in-betweenness in their overlapping effects, which are difficult to ascribe to a single competence. In truth, they overlap with other key competences and are always correlated, since essential aspects in one sphere favour competence in another.

Moving on now to a closer analysis of these competences in order to emphasize how they represent expert EDC knowledge, it is worth looking at the definition given in the Recommendation:

These include personal, interpersonal and intercultural competence and cover all forms of behaviour that equip individuals to participate in an effective and constructive way in social and working life, and particularly in increasingly diversified societies, and to resolve conflicts where necessary. Civic competence equips individuals to participate fully in civic life, based on knowledge of social and political concepts and structures and a commitment to active and democratic participation.¹³

The text also makes frequent reference to the essential knowledge, abilities and attitudes linked to these specific competences¹⁴ and clearly shows how these fall within the sphere of EDC, as seen from the analysis of various definitions of this type of education provided in different contexts.

Robert Putnam states that

'active citizenship' is strongly related to 'civic engagement' and plays a crucial role in building social capital. He considers that the pursuit of shared objectives provides a way for people to experience 'reciprocity' and thus helps to create webs of networks underpinned by shared values. The resulting high levels of social trust foster further cooperation between people and reduce the chances of anti-social conduct.¹⁵

The European Council research project, Active Citizenship for Democracy, coordinated by CRELL,¹⁶ recently supplied the following definition:

Participation in civil society, community and/or political life, characterised by mutual respect and non-violence and in accordance with human rights and democracy¹⁷

¹³ *Recommendation 2006, op. cit.*, L 394/16

¹⁴ *Ibid*, L 394/17

¹⁵ R. Putnam (2000), quoted in DG Joint Research Centre, 2006, p.9.

¹⁶ CRELL – Centre for Research on Lifelong Learning, <http://crell.jrc.ec.europa.eu/about_CRELL.htm>

¹⁷ R. Hoskins, 2006.

And the European Council EDC report reads:

EDC is a set of practices and principles aimed at making young people and adults better equipped to participate actively in democratic life by assuming and exercising their rights and responsibility in society.¹⁸

Moreover, the report, which covered the period from 2001 to 2004, summarized the goals of the EDC project in Europe, using the key questions shown below. The considerations made in this article provide an answer to some of these questions. A response to the others will be attempted in the following sections by considering the Italian context of institutions and educational resources.

- What values and skills will people need to be fully-fledged citizens in Europe in the 21st century?
- How can these values and skills be developed?
- How do we convey them to others, whether children, young persons, or adults?¹⁹

The above questions turned out to be the driving force behind the activities of the EDC research project and the gathering of materials for the sector analysis and reflections carried out by the European Council.

It seems clear that civic and social competences that can be acquired, developed and used within learning contexts and environments suitable to the purpose are essential for the development and fulfilment of educational paths in the EDC sphere. In the Italian teaching context these appear to be the following:

- cooperative learning
- multimedia documentation
- e-learning
- eTwinning
- role play
- peer tutoring
- school/work alternations
- problem solving
- projects
- exchanges
- simulations
- apprenticeships
- case studies
- training
- webquest

The above examples provide opportunities for the development of competences since learners are required to compare ideas, negotiate, evaluate, decide, respect multiple and diverse perspectives, select, implement, process, document, share and think during the entire process of constructing knowledge or producing outcomes in a realistic and concrete manner.

¹⁸ C. Bîrzéa, 2004, p.18.

¹⁹ *Ibid*, p.7.

The way this mode of learning works is also clear from the above-mentioned OECD DeSeCo programme, in which Rychen and Salganik define competence

as the ability to successfully meet complex demands in a particular context through the mobilisation of psychosocial prerequisites (including cognitive and non-cognitive aspects) and as the ‘internal mental structures in the sense of abilities, dispositions or resources embedded in the individual’ in interaction with a ‘specific real world task or demand’. ²⁰

The expressions “in a particular context” and “specific real world task or demand” reveal the gap between this approach and abstract and decontextualized forms of study, typical of more traditional teaching methods, and focus attention on concrete and practical forms of teaching.

It will be clear that teaching others to acquire civic and social competences requires teaching practices closely related to the competence of learning to learn.²¹ Such practices not only involve making choices and adopting behaviours, actions and relationships consistent with EDC basic assumptions, but also the adoption of new pedagogic structures that privilege the social dimension of learning and place the learner at the centre of the process.

Moreover, the social dimension of learning²² is also emphasized in the definition of competences provided in Ministerial Circular 84/2005, which restates and strengthens the mentioned attributes and the co-presence of the various indicated dimensions:

Competence consists in the personal actions of an individual, based on acquired knowledge and skills suited, in a particular context and a satisfactory and socially recognized manner, to satisfy a need, to solve a problem, to accomplish a task, to realize a project. It is never a simple, atomized, abstract action, but a complex one, which involves the whole person and through which cognition (knowledge) and abilities (skills), individual and relationship-related behaviours, emotional attitudes, chosen values, motivations and purposes are jointly and inseparably connected. That is why it stems from a continuous interaction between people, environment and society and between personal and social, implicit and explicit meanings.²³

Keeping the assumptions discussed so far in mind, it must be said that eTwinning activities are also important occasions in this respect, also in view of the revolution

²⁰ S. Rychen and L. Salganick (2003:43), quoted in Hoskins, 2008, p. 5.

²¹ R. Hoskins, 2008., *op. cit.*

²² With regard to the social dimension of learning see: “Bibliografia sull’apprendimento cognitivo affettivo sociale strategie, metodi, tecniche”, in *IRRER – Orientamento a scuola*. Ludovisi’s article on the connection between aspects of Web 2.0 and learning (Ludovisi, 2008) as well as Chiara Mazzanti’s Power Point presentation, University of Bologna (Mazzanti, 2008). For an introduction to Bandura’s social cognitive theory refer to the interesting video, “Bandura’s Social Cognitive Theory: An Introduction”, (Davidsons Films Inc, [video]).

²³ Ministerial Circular. no. 84, Department of Education, *Direzione Generale per gli Ordinamenti scolastici* (Directorate for Education Regulations) <http://www.edscuola.it/archivio/norme/circolari/cm084_05.htm>, consulted on 25/08/2008.

²⁴ G. Biondi, “eTwinning l’evoluzione di una... e”, in the eTwinning Italia National Unit (ed), *Uno, Due, Tre ... eTwinning. Le scuole italiane si gemellano con l’Europa*, INDIRE, Florence, 2007, p. 1.

of information and communication technology in the world of education, which has transformed the organization of teaching.

eTwinning projects today include excellent examples of the reorganization of teaching methods through the use of technology, language teaching through telematic collaboration between schools, exchange of experiences with regard to teaching tools and methodologies. Therefore, the “e” has ended up essentially characterizing the activities of schools interested in exchanging ideas, experiences and new solutions to the innovative use of technology in educational practice within the vast network that has gradually been built up. It is in this context that eTwinning experiences were proposed as case studies for teachers in e-learning professional training activities promoted by Indire.²⁴

The Directorate General for International Affairs (Direzione Generale per gli Affari Internazionali) believes that eTwinning provides

the opportunity to work for the school system of the future, a system that is not self-referential, but open to the surrounding world and guided by flexible teaching processes, with a high level of computer literacy and learning environments that aim to educate the new generation of “digital learners”.²⁵

Just like other school partnership schemes promoted by European programmes, eTwinning offers scope for experimentation aimed at opening the doors of Italian schools to the world, since students and teachers can interact on the basis of shared premises, criteria and practices, following a negotiation process that also permits differentiation between various possible paths, where each member can contribute with their own language and cultural experiences, despite possible initial difficulties.

Looking through the definitions of social and civic competences and of EDC, certain key words – which are listed below – meet the eye and may be considered characteristic of an efficient and effective educational context that encourages motivation, commitment and the desire for active learning.

The following are key words encountered in the definitions used in this article: tools, civic and civil, behaviours, community, sharing, behaviour, conflicts, cooperation, culture, democracy, human rights, diversity, trust, commitment, work, non violence, participation, practices and principles, reciprocity, responsibility, political and social structure, values, social life.

Are the above-mentioned words not some of the most significant characteristics constantly mentioned in various learning moments, contexts and spheres, particularly the cooperative sphere, which makes use of information and communication technology tools?

This does not only occur in student-oriented spheres, but also in communities where team work involves the use of shared electronic tools and planning, or in the fulfilment of integrated professional and school projects where participants come from different institutions, cultures, nations and ideologies.

Therefore, schools, professional training and lifelong learning spheres, more than any other sector, can weather current change and transformations in favour of the construction of situated, grounded knowledge. They respond to specific needs that encourage interaction and integration processes where diverse multiple intelligences

²⁵ C. Muritano, “eTwinning e innovazione”, *ibid*, p.3.

and the explanatory, procedural and technical capacities of single individuals make team work possible and create working and integrated learning communities.

Schools must adopt this system more and more often if they want to lay themselves on the line and become decentralized, creating networks, partnerships and consortiums, which, while using their own specific modalities, will favour the connections and interconnections that characterize participating and motivated individuals. At the same time, in their particular individuality, citizens must be able to recognize how the added value of their identity is provided by the ability to act to direct the local and the global towards common and interactive objectives. These individuals will be able to express themselves in distinct polyphonic ways, demonstrating a suitable level of flexibility, which will help them live their civic and social global identity to the full.

This is why educator and teacher training will only play an extremely important and significant role if it can plan training projects and processes that create learning situations aimed at experimenting with teaching practices and activities. Ideally, these would be best practices that guarantee transferability and place learners in concrete and problematic situations, encouraging cognitive and socially useful challenges.

What the above-mentioned words imply can only make sense in the various study groups and workshops that are set up. In this way, learners will feel they are an integral part of a single community. All of the above spontaneously generates a sense of belonging that is easy to recognize in a class – or in a working group – when members of the various subgroups of a project, experiment or technical simulation are ready to take part in a competition or event. The sense of belonging and the cohesion of the group and team will strengthen motivation with regard to the work done, irrespective of the different nature of each single contribution, making the use of civic and social competences more palpable.

Teachers and educators must therefore undertake various roles and functions, resisting the temptation to take over from pupils and learners and making sure they experiment, compare ideas and make mistakes, because the ability to control anxiety, manage emotions and accept the frustration resulting from making a mistake are essential components of any form of experiential learning.

Students should be able to attempt this kind of experience as a natural learning component that does not only imply forward bounds, but moments of stasis and deadlock as well. After all, civic and social skills and EDC do not pertain exclusively to excellent minds, but belong to everyone, even those who are at a disadvantage.

In its illustration of the essential knowledge, abilities and attitudes connected to the competences that are the subject of this analysis, the European Parliament and Council Recommendation also states that “individuals should be capable of coping with stress and frustration and expressing themselves in a constructive way and should also distinguish between the professional and personal spheres”.

If learning is to have a genuine role and not be limited to mere coaching or mechanical imitation of rules and procedures, using a different language from the mother tongue can be an authentic, irreplaceable experience in language learning.

More often than not, in transnational spaces for knowledge construction, individuals, in order to interact and communicate, need to be able to overcome the frustration of communication difficulties which require increased concentration and further effort that are not always rewarded with smooth, straightforward interaction.

Other contexts in which schools should help students interact through supportive

practices, even in the form of voluntary work, are communities for the elderly, hospital associations for the sick, cooperating companies and bodies dealing with discrimination. These situations provide students and adults with frequent occasions to become aware of different backgrounds, simultaneously exercising their citizenship by using their civic and social skills in real contexts, where they can concretely express empathy and support.

In fact, in the Recommendation, using and developing civic competences involves, above all knowledge of the concepts of democracy, justice, equality, citizenship, and civil rights, including how they are expressed in the Charter of Fundamental Rights of the European Union and international declarations and how they are applied by various institutions at the local, regional, national, European and international levels [...]

and

the ability to engage effectively with others in the public domain, and to display solidarity and interest in solving problems the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting.

The aim of the considerations made so far, which highlight just some of the essential aspects of the acquisition of civic and social competences in the ambit of EDC, is to stress the importance attributed to critical thinking, because this encourages an education that develops pluralism, tolerance, respect and learner autonomy, producing conscious electors, critical spectators and responsible consumers and savers, respectful of sustainable development and supportive and democratic human beings.

Obviously, all of the above also brings out the weak points of an education system where there is often a gap between declared intentions and practical accomplishments. In short, as the European Council EDC study concludes, there is often a difference between what is declared and what is actually put into practice.

There is a real gap between declarations and what happens in practice. There appear to be two risks: the ignoring of declarations of intent, and the failure to supply adequate resources;²⁶

However, this must not discourage educators and teachers since today they can make use of the resources offered by the various training spheres.²⁷ Over the last few years, the National Agency for the Development of School Autonomy, formerly Indire, and other education bodies, have been committed to supporting students and teachers with innovative learning methods. These new directions breed hope for the future because they provide blended teaching approaches and spaces, supporting the efforts of teachers who are open to change.²⁸

²⁶ C. Bîrzéa, 2004, p. 10.

²⁷ Here, reference is made to the various educational spheres of the National Agency for the Development of School Autonomy (ex Indire) on <http://www.indire.it/>, consulted on 25 August 2008 as well as the opportunities offered by EttCampus <<http://www.ettcampus.org/elearning/>>, <<http://www.apprendonline.it>>, <<http://www.saul.unisi.it/unisi>>, <<http://www.xformare.it>>, consulted on 25/08/2008.

Given that the education system in Italy and in most European states is based on the curriculum, the acquisition of competences that concern EDC cannot but take place, for the most part, within curriculum contexts and spaces.

One must, therefore, agree with the Council of Europe, which states that:

The main pillar of EDC at present is the formal curriculum. This arises from the fact that a curriculum already exists, providing a ready-made framework and the possibility of a structured approach, particularly with regard to the transfer of knowledge;²⁹

At the same time, however, we can look ahead with new prospects for the future, since

A more diversified approach – going beyond the curriculum and a need to develop partnership between stakeholders and practitioners – begins to emerge.³⁰

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²⁸ In particular, permanent training spheres such as FOR and PUNTOEDU or platforms such as *Life Long Learning*, which offer various courses (*Europa, Apprendimenti di base, For Tic*, etc.), are particularly effective because, besides providing resources for teachers, Administrative, Technical and Auxiliary Personnel and students (SOS, evening EDA courses and the Student Challenge), they also offer educational-didactic spaces which find their rightful place in teaching methods that constantly develop and strengthen civic and social skills according to EDC expectations).

²⁹ B rzc a, 2004, p. 10.

³⁰ *Ibid.*

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IST and Civic, Social and Intellectual Participation

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Why IST?

The introduction of the expression Information Society Technology marks a conceptual step forward in relation to the term Information and Communication Technology (ICT), often used in the past and already much more significant than “computer science”. It is not just a question of greater lexical precision, but of a change in mentality as well. The merit of the shift from “computer science” to ICT was, in fact, that it led to the abandonment of a specialized perspective, and introduced the idea that such tools were for everybody. The shift from ICT to IST moves the focus onto use contexts, that is, on a society that is characterized by the positive as well as negative aspects of the diffusion and use of information. This is the primary reason for my choice of title and for the approach I have adopted here, whereas the reason I chose to refer to civic, social and intellectual participation is based on the fact that the current teaching generation – where teachers are viewed as mediators between generations of learners as well as subjects undergoing professional training – is, in itself, a very clear example of the problems inherent to the use of technologies for cultural enrichment and intellectual activity, with reference to lifelong learning and the personal and collective intellectual growth it entails. In short, the eTwinning experience is an occasion to ponder the new connotations of teacher professionalism.

Civic, Social and Digital Competences

The devising and realization of projects employing digital technology and based on the collaboration typical of eTwinning represent an *intersection between the communicative and civic-social dimensions* as outlined in the European framework.

The European Union definition of “civic and social competences” states that they:

include personal, interpersonal and intercultural competence and cover all forms of behaviour that equip individuals to participate in an effective and constructive way in social and working life, and particularly in increasingly diversified societies, and to resolve conflicts where necessary.

Civic competence equips individuals to participate fully in civic life, based on knowledge of social and political concepts and structures and a commitment to active and democratic participation.¹

The key concept is therefore democratic and active participation. Similarly, taking the definition of “digital competence” – and breaking it down for greater clarity – it can be seen that:

Digital competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication.

It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.²

¹ Attachment to the *Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning*, GUUE L 394/16. The complete text can be found in the appendix to this volume.

² *ibid*, L 394/15

The most important aspect of this first descriptive passage is the attribution of *sense* though the identification of possible purposes (work, leisure, communication) for digital activity, which flank and enrich *tools* and *contexts*. Once again and in general terms, the concept of *participation* supports the idea of an intersection of this competence with civic and social competences. In particular – from a teaching point of view – it is important to understand, give value to and simultaneously render problematic the profound *cultural and cognitive value* of the basic competences listed.

The second descriptive passage is an invitation to dwell on the fact that:

Digital competence requires a sound understanding and knowledge of the nature, role and opportunities of IST in everyday contexts: in personal and social life as well as at work.

This includes main computer applications such as data processing, spreadsheets, databases, information storage and management, and an understanding of the opportunities and potential risks of the Internet and communication via electronic media (e-mail, network tools) for work, leisure, information sharing and collaborative networking, learning and research.

Individuals should also understand how IST can support creativity and innovation, and be aware of issues around the validity and reliability of information available and of the legal and ethical implications involved in the interactive use of IST.³

Expressions such as “nature”, “role”, “opportunity”, “creativity”, “innovation”, “potential”, “validity”, “reliability”, plus the potentially problematic aspects and risks, cannot be underestimated or simplified. We must give them the thought they deserve and guide our students to reflect on how information society technology may enrich our lives in a communicative, cultural and cognitive sense and simultaneously give rise to negative situations. A good example of the application of this fundamental dual dialectic perspective is a quick exploration of what is known in Internet jargon as a “link”. Available through the click of a mouse, links virtually activate a network of references underlying a digital cultural product. This is a communicative potential that the creators of a given digital product may *intentionally* use and which readers may intentionally take advantage of. It is best, then, that both parties should be aware not only of the technicalities behind the construction of a link, but, more importantly, of the cognitive implications of digital writing, as this form of writing may make deliberate use of reference links, which may even be prevalent with respect to the linear aspects we are accustomed to in writing on hard copy.

The difference is a potential source of disorientation.

Digital Skills and Attitudes

A definition of the skills required to be digitally competent places emphasis on both cultural and cognitive aspects, with an important reference to *critical thinking*, a basic element for authentic personal autonomy and effective empowerment:

Skills needed include the ability to search, collect and process information and use it in a critical and systematic way, assessing relevance and distinguishing the real from the virtual while recognising the links.

Individuals should have skills to use tools to produce, present and understand complex information and the ability to access, search and use internet-based services. Individuals should also be able to use IST to support critical thinking, creativity, and innovation.⁴

³ *ivi*, L 394/16

The description of attitude – something which must be constructed and is not already possessed – for an intentional, critical and productive use of information technology confirms the intersection between digital skills and the civic and social context. Cultural participation is clearly and explicitly viewed as an opportunity for improvement:

Use of IST requires a critical and reflective attitude towards available information and a responsible use of the interactive media.

An interest in engaging in communities and networks for cultural, social and/or professional purposes also supports this competence.⁵

From this perspective, the extraordinary opportunity for this generation of teachers is the *social and cultural need to learn together with their students*: Teachers and professors must not, in fact, simply guarantee the students the competences, knowledge, abilities and cognitive and cultural attitudes outlined so far, but must acquire them themselves.

One of the reasons why schools in general have been subjected to media overexposure in recent years as a result of an irresponsible use of technology – “digital bullying” represented by the deplorable videos that have appeared on the Internet – is the resigned attitude of some teachers when facing a situation that seems uncontrollable. However, eTwinning is a good cultural and professional example of a community where useful tools and knowledge can be acquired to transform *a vicious circle into a virtuous circuit*: if schools manage to assign a sense to the use of digital technologies in learning, they will finally be recognized as such by all the people involved and become part of the acknowledged cultural background.

What has been discussed so far serves as a basis for an analysis of features of the teaching profession that relate to the use of digital technology for cultural mediation objectives, conscious of the cognitive processes at play and with dynamic, ever-changing civic and social goals in mind.

Social-cultural Traits of the “Digital” Teacher

IST – and Internet in particular – is a clear representation of the *complexity of knowledge*, but is also an opportunity to provide such technologies with an effective and introductory dimension, which makes it possible, to some extent, to cope with and use them for learning purposes. In a parallel fashion, digital technology may cause bewilderment: How often have we lost our way on the Web, not reaching the goal we had set ourselves?

The “technological choices” a scholastic unit must make if it wants to be useful in an information society, guaranteeing effective learning paths for all students and useful professional opportunities for all teachers, entail an individual and collective process of *responsibilization*. It is a question of deciding together, without delegating everything to (supposed) experts, on approaches and priorities, the assignment of resources and effective evaluation of the projects in progress in relation to a school’s Annual Education Plan. With respect to the past and for those who desire it, digital technology provides a hitherto unknown *visibility* for individual and collective teaching and training activities: the publication on the Web of eTwinning projects and their results is an obvious example, and nothing further needs to be said regarding this wonderful novelty and professional opportunity. Visibility can generate debate, discussion, synergy. The most significant creative teaching products can easily be copied: in fact, digital supports facilitate immediate *reproduction* with no detriment to quality. *Digital rights* must be respected, however, and it is therefore important that teachers become aware of traditional concepts such as copyright, but above all of *open source* – or “open code”, a method used for

⁴ *ibidem*

⁵ *ibidem*

the production of free software – and *open content* – a copyright management method characterizing open cultural content, which developed into the *Creative Commons Licenses* model. Finally, the digital production of content must take the right to universal access into account: Schools must have at least a perfunctory idea of the logical and technical problems and principles regarding access to tools, software and websites by all citizen categories, regardless of personal conditions.

Relational Traits of the “Digital” Teacher

IST places us within cultural as well as economic *globalization* processes with the resulting advantages and disadvantages. Thanks to the Web, more than anything else, *the world is at the school door*, and it is up to us to decide if, how and to what extent to use it. Wi-Fi connections – which are becoming increasingly cheaper and more efficient – make the idea of having Internet in the classroom more feasible every day, ready to be used any time it becomes necessary. Interaction technologies make strategic *cooperation* possible *between teachers, between students* and *between teachers and students*. eTwinning is an example of this dimension of learning and professional activities. Therefore, among other things, it could be a point of contact between different generations, where they can come together to develop digital, civic and social, linguistic and scientific competences, etc.

With IST it is possible to flank socialization – one of the most important dimensions of life at school – with *virtual social relations*; even in this case, the resource must be used in a balanced and reasonable way, without lapsing into experimentalism and technical virtuosity.

Finally, IST is an occasion for schools – which are too often self-referential – to really produce data, information and knowledge, hence *becoming decentralized when it comes to communication*, to build authentic cultural relations, uncompromised by having to share typical everyday life in a traditional classroom.

Linguistic Traits of the “Digital” Teacher

There are still many people who state that they have not yet mastered English well enough to deal with the Internet. The idea that this condition exists is, in part, an urban legend, because more and more important content is being produced directly in Italian. In particular, the idea is contradicted by certain, widely available and shared communicative models; most Web users want others to understand them and to understand others.

Even the imprecise English of this writer is often enough to effect useful communication: to receive or find simple information through a search engine, buy software, a trip or an item on e-bay and so on. Some even claim it is enough to know *Globish* – a sort of simplified English, made up of about 1500 words, invented by the Frenchman Jean-Paul Nerriere – to communicate effectively in many real life situations. This last statement is probably over-optimistic with regard to schools, but the so-called *inter-comprehensive* model – according to which people who wish to understand each other will, particularly if they have a common linguistic background, such as those who speak languages deriving from Latin – is really interesting from a cognitive and educational point of view. Too often, in fact, schools and teachers in particular only tackle what they know (or think they know) to perfection, that they have a complete mastery of (or think they do), and so on and so forth. This attitude must be overcome, not just with regard to the use of IST – which by definition requires an explorative attitude, a willingness to learn and change one’s approach and interpretation paradigms – but with respect to all knowledge in the world today, which is in constant evolution and subjected to constant debate. eTwinning is also important from this point of view, because it offers the opportunity for a progressive negotiation that is not just functional, but also conceptual and linguistic. Meanings are not statically affirmed, but dynamically constructed. And it must be emphasized that striving to understand one another is also important in developing the ability to reduce

and avoid conflict, an essential civic-social competence in contemporary life. Moreover, from this perspective, “publishing” means consciously exposing one’s own elaborations to criticism, subjecting them to debate, to other people’s observations and reasoning, giving them a dynamic identity, the basis for open cultural growth, which, probably for these same reasons, is deeper and more significant.

Two Cases Illustrating the Cognitive Implications of the Use of Digital Environments

What has been sustained so far proves the need to go into more depth with regard to the cognitive implications underlying the use of information society technologies, understood as implementations of logical-communicative models.

First of all I would like to offer a description of what knowing how to use a database from a cognitive viewpoint means: “Being familiar with and knowing how to consciously use database questioning and research functions, including those on the Web, to find required information, understanding and intentionally using cognitive implications (explicit conceptual...) and functional implications (access and search result return speed, data acquisition possibilities, repeatability, refining possibilities) implications, paying attention to the development of interface engineerization.”⁶

Secondly, the following is a suggestion about how to evaluate digital tools for publication:

Understand and learn to use the different values of the various tools according to the:

- supported conceptual density;
- adopted destination stability;
- invited collaboration potential.⁷

Here are a few examples to make the above easier to understand. A written text on a traditional support (a book, for example) supports a very high conceptual density and is by definition a highly stable destination; only the original authors can collaborate in its preparation and if there is an update, a new edition is published. A wiki possesses a virtually infinite collaboration potential (anyone can write on Wikipedia), consequently the product is highly unstable and destined to undergo constant variation – an aspect that can be very useful for the progressive definition of open concepts subject to debate. The degree of conceptual density supported here is only average, otherwise there is the risk of confusion. A blog prompts collaboration only from subjects accredited to participate in the work and the products are transient (for example, they are archived at fixed intervals). In view of the situation, the overall conceptual density is quite low, otherwise there would be bewilderment and so on. Any user can test this – if they want to – by analysing the pages of a dynamic website and those of a static website, the slides in a digital presentation etc., on the basis of these variables.

⁶ M. Guastavigna, “Per l’autonomia Internettuale”, in *Dossier di Insegnare*, n. 1, 2007, p. 46

⁷ M. Guastavigna, art. cit., p. 49

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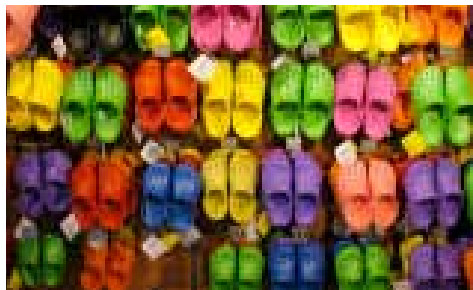
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**Project kits for the development of Social and Civic Key Competences:
proposals from the Seminar working groups**





Colours and Sounds of Tolerance and of Active Citizenship

Schools involved: primary and secondary schools

Age of pupils: 8-18

Language: Mother tongue, first and second Foreign Languages

Expected duration: one school year

Subjects: History, Geography, Law Economics, Religion, Philosophy, Education Physical, Education Music, Languages, Computer, Science

Specific Theme

The subject of the project was chosen on the basis of the European theme of the year: interculture

Brief Description

The project focuses on learning more about what interculture means in 21st-century society, and how to become active citizens and to overcome ethnic barriers. Taking the multicultural reality of Europe's schools as a point of departure, and in the light of the fact that 2008 will be the European Year of Intercultural Dialogue, the goal is to organize a project devoted to intercultural dialogue and the learning of mutual respect and tolerance, adopting forms of behaviour appropriate to different contexts.

Objectives

- Greater self-knowledge
- To learn about and listen to others
- Increased understanding of differences
- To learn the values of respect and tolerance in the school environment
- To become more aware of the importance of active, democratic participation in society

Envisaged Processes and Activities

- Presenting oneself and listening to others doing likewise
- Group and pair work
- Research on the internet
- Interdisciplinary modules

Final Outcomes

- Various kinds of multimedia outcome
- According to the level of the school, outcomes may range from drawings and poems to the simulation of a class or school assembly in video conference, the production of a video, a music CD or a Power Point presentation

ICT Tools Used and their Purpose

- Power Point
- Video production equipment and software
- Tools for editing photos and drawings
- Virtual learning environments (community, virtual classrooms)
- Forums and e-mail
- MP3
- Video conference

Expected Results

A change in attitudes to others and to other ethnic groups

Documentation and Dissemination

School website, video conference with other schools to increase socialization

Democracy in What Sense?



Schools involved: upper secondary schools

Age of pupils: 14-17

Language: English

Expected duration: one school year

Subject: Law, History, L1 and L2, Computer Science and Mathematics

Specific Theme

The concept of democracy: from theory to practice.

Brief Description

The concept of democracy is almost as old as human history. Over the centuries democracy has adapted to different ages, evolving together with the human race. Today it is a universal principle, but one with many aspects and implications that are worth investigating and studying in greater detail.

First of all, a questionnaire will be prepared and completed to elicit what pupils already know about the theme of democracy from ancient times through to the present day. Five key themes emerging from the questionnaires will then be delineated. The third step will be to organize groups of parallel classes (intercultural and transnational) into thematic committees to discuss the five selected themes. Finally, research will be done and documents will be produced and shared.

Objectives

- To encourage pupils to become responsible, aware citizens respectful of self and others
- Active participation in both a real and virtual environment

Envisaged Processes and Activities

- Comparative historic research
- Drawing up of questionnaires
- Group discussion
- Production of documents to share within and between groups

Final Outcomes

- Documents and shared resolutions regarding chosen themes

ICT Tools and their Purpose

- Email, chat sessions, forums, archives
- Operating systems and applications as needed

Expected Results

- Increased awareness on the part of pupils that they are European citizens and greater knowledge of the disciplines involved

Documentation and Dissemination

- Posting of outcomes in TwinSpace and the proposing of the project to other schools



The Upside and Downside of Rights

Schools involved: upper secondary schools

Age of pupils: 8-18

Language: Italian and other European languages as pertinent

Expected duration: one or two school years

Subjects: all, organized on an inter-curricular basis

Specific Theme

Rights, needs, environment, rules, equality, integration

Brief Description

Starting from consideration of the broad notion of rights as principles for positive, civic coexistence between peoples, the discussion and activities will then focus on a number of aspects in particular: the environment, integration, equality. After exploring themes in a speculative fashion, pupils will produce posters with slogans and logos, and advertising jingles. These will be used to publicize the results of the project in the course of special themed day-long events.

Objectives

To explore and discuss the following themes:

- Diversity and wealth
- Awareness of rights and rules
- Ability to arrive at compromises
- To encourage respect for values
- To involve the local community and area
- To make a critically aware and confident use of ICT tools
- Equality
- Integration
- To further communicative competence

Envisaged Processes and Activities

- Organization of an advertising campaign
- Designing of logos and slogans
- Advertising posters
- Advertising jingles
- Organization of special one-day theme-based sessions in the school
- Guided on-line research and activities in various languages
- On-going and final interactive comparison in various languages

Final Outcomes

- Themed day events
- Posters
- Advertising jingles
- Documentation and dissemination
- Sharing of outcomes, posted on line

ICT Tools Used and their Purpose

- Video films
- Movie Maker applications as needed
- Power Point
- Image processing software
- Internet for activities and research
- Blog
- Forum
- Chat

Expected Results

- Increase in the awareness of pupils
- Interaction with the local area
- Improvement in language and communication skills
- Increase in the ability to collaborate and to learn in a cooperative fashion, both directly and on a distance learning basis
- Integration and valorization of diversity

Documentation and Dissemination

- The advertising campaign with posters and jingles will be the principal means of publicizing the results of the project
- Theme-based day sessions open to the whole school
- Posting of outcomes on line



'Touring' Europe

Schools involved: from nursery to secondary school

Age of pupils: 3-19

Specific Theme

Behavioural codes and social values

Brief Description

The idea of the project is to encourage primary and secondary school pupils in Europe and the Mediterranean to develop "the capacity to communicate constructively in different environments". This will involve examining communication in both horizontal terms (between pupils of the same age and sex) and vertical terms (with adults occupying various social roles) terms. The logo of the proposed project, a snail carrying a globe which then opens up to become the European children's parliament, captures the essential spirit of the initiative: to travel through Europe slowly, taking in the colours and specific characteristics, and then to explore the civic and social synthesis represented by EU institutions. The pupils will be active protagonists throughout.

Objectives

- To learn, to understand, to reflect upon and to share different behavioural codes
- To learn to respect different points of view
- To show tolerance
- To develop a sense of being a European citizen through the sharing of values

Envisaged Processes and Activities

1st year – Getting-to-know-one-another phase

- Getting to know the participants and the current cultural identity.
- Classification of behaviours and rules in the school environment (between peers of different gender, with adults).
- Discrimination between positive and negative attitudes (role play activities with exchanges of roles, photos, drawings, chat sessions, email).

2nd year – Behavioural studies

- Further investigation, depending on the school level, of behavioural dynamics and social values

Language: English

Expected duration: three years: 1st year – getting-to-know-one-another; 2nd year – behavioural studies; 3rd year – the value of social participation.

Subject: English, Subjects involving gestures and emotional literacy

in relation to pupils' psychological and physical development (including the crisis of adolescence).

- Watching of films (in any language) that stimulate reflection and engagement leading to a critical acceptance of others.

3rd year – The value of social participation

- Interviews and meetings with various figures in the school system: caretakers, technical staff, office workers, headteacher, mayor, local councillors, etc..
- Forming of a children's local council (at a local level) and a "Schoolchildren's Parliament" which presents a common petition.

Final Outcomes

- Sketches, photos, drawings, presentations, short films, etc. in the EU languages.
- Blog, with the use of all available ICT tools in the schools involved.
- Creation of a logo consisting of a snail moving across (touring) the globe with its heavy shell-home, gathering and bringing together the contribution made by all the pupils (communication that moves) to the establishment of an organ for participatory citizenship. The means of diffusion is a movie, represented symbolically by the trail snails leave behind them.

ICT Tools and their Purpose

- Video filmmaking equipment and software
- Video phones
- Recorder

Expected Results

- Acquiring of target attitudes, identified by teachers and parents alike through questionnaires.
- Improved ability to interact with the local body (the probable Children's Council, with specific petitions).

Documentation and Dissemination

- Blog and documentation on the net (e.g., TwinSpace).
- Open days, during which pupils will illustrate the project to outside visitors or to other schools that have accepted the invitation



Developing flexible attitudes and behaviour

Schools involved: upper secondary schools

Age of pupils: 14-19

Language: Mother tongue and foreign languages

Expected duration: one school year (35-hour module)

Subjects: History, Geography, Law, Economics, Religion, Philosophy, Education, Physical Education, Music, Languages, Information Technology

Specific Theme

Conflict negotiation

Brief Description

On the basis of a case study about conflict negotiation, pupils reflect individually and collectively on the implications this has in group dynamics. In the discussion workshops everyone's thinking on the matter is reworked and the conclusions are posted on the blog. The processes adopted and the conclusions may be dramatized in a theatre show.

Objectives

- To contribute to discussions in a correct fashion
- To improve written work (CFR framework)
- To increase interest and motivation in school life
- To develop the ability to support peers
- To improve the quality of interaction with the teacher
- To increase the frequency and quality of interaction with the member countries

Envisaged Processes and Activities

Case Study: Negotiation of a Conflict.

- **Phase I** Reciprocal knowledge: getting to know each other in order to interact.
- **Phase II** Data gathering: what conflicts arise most frequently in your class?
- **Phase III** Deciding which conflict to work on
- **Phase IV** Studying the dynamics of conflict: how did it arise? When did it arise? Why did it arise?
- **Phase V** Consideration of hypotheses. Establishment of discussion workshops: the pupils explain why proposed solutions are appropriate or not.
- **Phase VI** Simulated vote – pros and cons: using Skype and video conferences, and working in small groups of five, the pupils vote on the most convincing hypothesis, and justify it.

- **Phase VII** Log book: reflection and documentation, drawing up of guidelines designed to encourage flexible attitudes and behaviour in problematic situations.

Final Outcomes

- Blog
- Video conference
- Forum
- Theatre show

ICT Tools Used and their Purpose

- Email
- Forum
- Podcast
- Wiki
- Podcasting
- Skype
- Video conferencing

Expected Results

- Greater autonomy in managing work through individual activities (email, forums)
- Development of the capacity to work in groups, through various kinds of small-group activities (blog, newsgroups, forum)
- Cooperative learning (integrated podcasting, wiki)

Documentation and Dissemination

At the end of the project, after the pupils have reflected upon and discussed the issues, their thoughts and conclusions are documented in virtual space (the blog) and in real space (the school theatre)



Guidelines for the European traveller

Schools involved: upper secondary schools

Age of pupils: 14-19

Language: English, French

Expected duration: one school year

Subject: all

Specific Theme

Places of worship and codes of behaviour

Brief Description

In view of the importance of religion in the social life of individuals in 21st-century society, the aim of the project is to study all the major religions – one's own and that of others – from a historic, social and cultural point of view, in order to draw up a set of guidelines for correct behaviour useful for all schoolchildren going on tourist and religious itineraries.

Objectives

- To reinforce one's own identity whilst respecting diversity
- To encourage comparison and exchange
- To develop a sense of belonging to the European Union

ICT Tools and their Purpose

- Chat
- Forum
- PPT
- Wiki

Envisaged Processes and Activities

- Historic, artistic and cultural study of the chosen places
- Analysis of codes of behaviour
- Identification of norms and appropriate forms of behaviour in different contexts

Final Outcomes

- Tourist package
- Guidelines for behaviour

Expected Results

- Improvement in language and communication skills
- Learning of responsible modes of behaviour
- Greater knowledge of European cultural realities

• Documentation and Dissemination

- Dissemination of the experience of the project at school through the use of multimedia tools
- Publication on the school's website and on TwinSpace



The contribution of eTwinning to the development of Key Competences: Cultural Awareness and Expression

Definition of the European Recommendation, December 2006

“Appreciation of the importance of the creative expression of ideas, experiences and emotions in a range of media, including music, performing arts, literature, and the visual arts.”

Creative Expression and New Media

by Ermelinda Guarino

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Introduction

The growing complexity of relationships in an interconnected world requires a more sophisticated system of competences. The inexorable nature of globalization affects various sectors: cultural and economic through trade and the increasing movement of people; environmental, with the need to share the world's resources; and political and social through supranational structures and telecommunications. This profound change calls for new educational forms and processes. The Recommendation of the European Parliament and of the Council and the accompanying "Key Competences for Lifelong Learning – a European Reference Framework", draws attention to the educational requirements of the new knowledge society, and affirms that the community needs its citizens to develop at a personal level through the acquisition of key competences. What led to the formulation of this framework is, to a certain extent, the desire to provide an ideal pedagogic unification of European national school systems. Growth and development objectives are closely tied in with those of social interest, such as cohesion, inclusion, and the valorization of individuals and their competences. Economic development goes hand in hand with cultural development and poses the question of quality in the training paths of each Member State.

Key Competences

The key competences identified in the framework include some that are strictly cultural and others that embrace various spheres; the intersection of knowledge, skills and context-appropriate attitudes inherent to the latter play an important role in the full acquisition of the former. As described by the Recommendation, cultural awareness and expression consists of an "appreciation of the importance of the creative expression of ideas, experiences and emotions in a range of media, including music, performing arts, literature and the visual arts".¹ However, the key terms emerging from this definition, such as *creative expression*, *emotions*, *ideas*, *media* and *experience* are rarely considered in traditional teaching practice.

Creativity Versus Traditional Education

Over the last few years, attention in the education world has shifted from content to skills. Cognitive psychology experts have clearly shown how our current systems - European, American, Asian – generally aim for an accumulation of knowledge and data. More often than not, however, scholastic knowledge cannot be applied or elaborated outside the specific context in which it is transmitted, while codes, technologies and signs are growing increasingly more complex.

In his latest book, *L'ospite inquietante* (A Disquieting Guest), Galimberti writes:

One cannot but wonder [...] whether the primary cause of juvenile malaise is the emotional and existential emptiness schools in general generate around their students because the nature of the culture they teach is so dispirited that the uninvolved student couldn't care less if he studies Logarithms or Foscolo's *On Sepulchres*.

¹ See the complete definition relative to the eighth competence "Cultural Awareness and Expression" in the *Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning*, GUUE L 394/18. The full text can be found in the appendix to this volume.

He goes on to say that in a school where memorizing facts is considered more important than making personal sense of the received information, students

[...] with low creativity, limited fanciful projections and a limited set of emotions are the most successful, because the mind can more easily archive all the notions in rigorous and precise order.²

Deep learning is something else. It stems from a process where the learner does not have to simply memorize and repeat the given information. A personal sense must be constructed, so that problems can be subsequently solved through cognitive effort, giving rise to further activities in different contexts. This presupposes an improvement in the quality of the learning experience through the revision of its traditional paradigm, which still lies at the basis of current teaching methods.

Cultural Awareness and Expression

Cultural expression is a strategic competence and is centred on the value of the pedagogic experience of art. This means that in the teaching process, the various art languages are seen as active experiences, fields where listening, observation and composition merge. Literature, dance, painting, the theatre, music, visual arts, each with its own specific language, give rise to different learning methods, stimulate creativity and provide opportunities for encountering the unusual. They are not simple forms of aesthetic education, but a way to learn more about the world that surrounds us, to elaborate and interpret it in our relationships with other people.

Transversal characteristics and a strong link with language development place these key competences at the centre of an effective educational system. On the one hand, they sustain intercultural dialogue and understanding, essential to the further development of European integration, on the other they nourish and favour imaginative thought, establishing a connection between education and culture.

The inexorable nature of globalization is inevitably leading to the movement of large masses of people of different cultures who speak different languages. Moreover, information and communication technologies become channels that favour meeting and interaction between distant cultural expressions, or accentuate the digital divide when such technologies are not present or available. Above all, in a Europe that brings together two profoundly different worlds as far as levels of culture and development are concerned, awareness of the cultural heritage of one's own community helps each citizen develop knowledge and a sense of belonging, while simultaneously favouring tolerance, broadmindedness and curiosity with regard to diversity. This makes individuals more open towards and accepting of others or of different cultural expressions.

To Educate Does It Suffice to Instruct?

Today, the role of creativity is central to the development of a knowledge society. It suggests development of basic competences transferable to a professional context, which can be developed thanks to a teaching practice based on active thinking. In this globalized world, it is becoming increasingly important to find a balance between analytical thinking and imagination, sustaining a continuous learning process, applying problem-solving techniques while maintaining a systematic vision, cultivating creativity and innovation in organizations. Creativity is important for imaginative thinking, for decision-making and risk-taking, for active listening, multiple ideas and points of view and in the search for different paths.

² U. Galimberti, *L'ospite inquietante, il nichilismo e i giovani*, Feltrinelli, Milan, 2007

In essence, it is the opposite of a natural tendency towards mental inertia, whereby consolidated and established mindsets are used to cope with everyday life. In this way, however, it is impossible to adapt to a fluid world in constant change. That is why educating individuals to think creatively is a necessity in spaces dedicated to information. Special care must be taken to include creative thinking training and development in daily pedagogics, rather than supporting ordinary teaching approaches with special creative teaching methods in limited and specific spheres of activity.

School As a Place for Exercising Creativity

Educating young people to develop their passion for the arts and their literary faculties implies the development of a sound grasp of languages, alphabets and codes to represent the world through creative expression. The learning environment, however, must be stimulating, open to participation and the development of curiosity. According to Henry Poincaré, creativity is the discovery of new connections between known elements:

A result has value, if at all, when a connection established between two distinguishable, known elements, apparently foreign to one another, immediately brings order where there seemed to be disorder [...] To invent is to avoid constructing useless combinations, only constructing useful ones, which are a scarce minority. To invent is to discern, to choose [...] between all the combinations that could be chosen. The most productive ones will consist of elements taken from very disparate sectors.

The two cultural assumptions necessary for this conception of education are that creativity lies in all of us and that it can be continuously improved and developed.

The Emotional Sphere and Effective Learning

The definition of cultural awareness and expression in the Recommendation mentions the expression of emotions. Scholastic and professional success, as well as personal fulfilment, implies the acquisition and consolidation of emotional skills.

Daniel Goleman maintains that emotions favour and accelerate learning processes. Through the use of emotionally absorbing situations, learning becomes immediate and pleasant but above all, it becomes effective. Effective management of feelings facilitates individual and group learning processes, which develop during the life cycle thanks to improved emotional management aimed at refining listening and empathic skills.

The increase in effectiveness emphasized by Goleman becomes essential on a personal, professional and educational level, because it focuses attention on improving teacher-student relationships.

Emotions have a central function in learning and teaching processes and not just in the social and interpersonal sphere. Development of emotions and intellectual skills are strictly interconnected. Yet, our education system is mainly based on cognitive skills and tends to consider emotional ones as an accessory. An educational process, where scholastic learning is an important segment only acquires real significance if it is aimed at the complete development of learner energies, which, as Montessori wrote, can be intellectual, social, emotional, creative and motoric. The student's entire personality must be involved in a wider relational context.

Once again, there is a contrast between mnemonic, passive learning and significant, autonomous learning that involves the student deeply. Carl Rogers, who worked long and hard on the idea of education founded on global student participation on both a cognitive and emotional level, declares:

When a school develops a student-oriented education system that favours growth, learning occurs at a deeper level, happens more rapidly and extends to a student's life and behaviour, more than education acquired in a traditional classroom ever would. This occurs because the chosen direction is an independent choice, education is self-established and the entire person is involved in the process, with feelings and passion placed on the same level with intellect.

Creative Thinking and Divergence

Convergent thinking has always prevailed in traditional teaching: there is a correct solution for each problem. On the other hand, creative thinking is the result of the dialectic between convergence and divergence. Creativity is to dream the impossible and find a way to give substance to those dreams, combining imagination with rules; involvement, play, research and curiosity with rigour, commitment and method.

In his book *La creatività mode d'emploi* (Creativity, Instructions for Use) Hubert Jaoui maintains that every individual, independent of age, sex or environment, possesses immense creative potential of which only a small part is exploited. This potential can be activated and developed through a suitable approach.

Creativity and new media: some examples

The human mind needs more to develop; in this sense, individual identity is not annihilated, but is constantly built and rebuilt by sharing common experiences of reality. In this way, creativity is not an individual product, but an interaction among many, using the tools pertaining to that specific society.

The change in methods of communication of the *net generation* through the media poses the problem of the use of technology in education for all those operating in the field, assuming that only a proper use of technological innovation can stimulate creativity and increase expressive skills.

The MAR.IN.A.ND.O Project

The MAR.IN.A.ND.O project, (*Marettimo in ambiente di apprendimento online* – Marettimo online learning environment) was set up with the development of key competences and cultural and creative expression in mind, financed by European structural funds and with the approval of the ANSAS (Italian National Agency for the development of school autonomy). Aiming to offer isolated students a vaster relational environment through the Web, it slowly transformed into a place where new forms of communication linked to the language of animation, poetry, music and theatre could be elaborated. This is an example of how sharing technological tools can facilitate interaction between students who are far away from each other and improve expressive skills.

Everyday, first-year high school students geographically distant from each other take part in collaborative activities from their virtual classroom, sharing various multimedia interactive blackboards, a platform containing synchronous and asynchronous communication tools, a blog and a videoconference system.

Certain theoretical and methodological considerations lie at the basis of this experimentation. The first is that learning is always individual, but takes place within interpersonal and group interactions that change and restructure individual knowledge. The choice to connect a number of class groups on the Web is therefore an attempt to create this essential condition for the development of a real knowledge process. The second is that each available technological tool is not considered sufficient on its own to produce significant learning. The possibility of using a number of codes, the availability of immediate access to Web resources, the use of dynamic materials and visual environments where students can compete and support each other as equals makes for active participation and gives rise to a very wide series of expressive possibilities. By choosing to engage in certain activities, such as the production of an animated film, for

example, students can remediate didactic materials through various processes. An idea, a story, a process cross various communication channels and are reassembled through a series of codes, thus drawing on multiple student learning methods. As for teachers, one of the most interesting effects is that of focusing attention on teaching methods and on the possibility of using multi-modal approaches during teaching activities. Their role is subjected to inevitable change because they become organizers and providers of both cognitive and emotional support.

Matrix Codes and Real Social Tagging

Sharing of perceptions, memories, languages and emotions through the media leads to an interaction between various arts, a synthesis of languages. With more and more people using the Web every day, interesting artistic experiences are gathered and developed online. One such experience is the project established as an active citizenship training centre in Turin, in collaboration with the Diffused Museum of Resistance, Deportation, War, Human Rights, Freedom and the Acmos PerformingMediaLab.³ The project aims to create an emotional relationship between history, places of memory and new generations; *digital storytelling* developed through the sharing of codes and matrices containing images and information to be located on particular, highlighted websites. Specific reading software downloaded on a videophone is all it takes to open the virtual door to a narrated story and space where students can interact, integrate information or leave a comment if they so desire. The didactic potential of codes and matrices for the creation of collective stories is obvious, since through them, it is possible to recover social and emotional memory. In this way, places seen through satellite maps are open to *social tagging*, where anyone can contribute, without any intermediaries whatsoever, to the creation of an unofficial story.

³ See *Territorio e memoria, i luoghi della resistenza*, <<http://memoria.acmos.net>>

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The Twinning Experience Space

by Laura Parigi

ANSAS (National Agency for the Development of School Autonomy) – formerly Indire

Communication Spaces: Technologies and Metaphors

“Communication technologies reconfigure the space (and time) of our experience” (Levy, 1996).¹ Claims like this bring to mind the newest forms of technology, namely digital technologies, and the copious phenomenology that comes with it. Ever since the computer ceased to be a “simple” calculator, turning into a communication tool, it has given rise to “places” described or even planned by resorting to metaphors and neologisms. The space formed by the connections between computers is a *cyberspace* (Sterling, 1992), Internet is an “information superhighway” (Stefik, 1997) and knowledge a “World Wide Web” to which virtually any individual can make a contribution (Berners Lee, 1999). In these “places”, in these shared contexts of experience, intelligence is collective, “distributed everywhere in real time” (Levy, 1996) or connective (De Kerkhove, 1998), that is, produced by a synergy of individuals.

These expressions, which evoke socially innovative and cultural as well as technological scenarios, have been coined by “meteorologists” of contemporary culture (engineers, sociologists, anthropologists, experts in media studies). Observing and analysing the present, they foresee, and at times look forward to, the introduction of new modes of expression and communication. However, these are sometimes appropriated by a culture that voraciously devours their significance and implications, transforming them into slogans or powerful statements that represent a finish point instead of a basic condition to build communication among individuals.

An attempt to “break out of the metaphor”, to avoid such a reduction, can be of crucial importance when the space reconfigured by these technologies is an eTwinning space between schools. In fact, this “technological space” is the environment where pupils and teachers interact on projects to the greatest degree.

The Evolution of Communicative Spaces Through Technological Innovation

If one looks closer, and in more concrete terms, it becomes apparent that cyberspace consists of a very disparate range of tools: electronic mail and forums for communicating in an asynchronous way, chat rooms and web videoconference systems to interact in real time, web pages that are almost an online transcription of alphabetical texts and multimedia content that uses heterogeneous “linguistic” components and systems such as words, images, sound and interactivity. Cyberspace is a complex, multi-faceted reality, which contains many possible “ecologies” and numerous “adaptations”.

When ICT is used in communication, as in the case of eTwinning, “distance” has many dimensions: besides the physical dimension, there is a distance between old and new media. If one looks back, it is possible to observe a “change in the landscape”. In the mid-80s, as I recall, twinning experiences at school consisted of pen-pal schemes or rather, a network of pen-pals, that the class forged with peers in a distant city. The exchange was mainly a preparation for a meeting, an opportunity to practice writing in a foreign language, and on rare occasions a photograph was sent. ICT can also be used

¹ To understand Levy’s point of view on the relationship between Internet and the concept of space and time see the interview of Pierre Levy and Derrick de Kerkhove “Due filosofi a confronto. Intelligenza collettiva e intelligenza connettiva: alcune riflessioni”, 27/03/1998, [article], in *Mediamente.it*, <<http://www.mediamente.rai.it/home/bibliote/intervis/d/deker05.htm>>, consulted on 5 September 2008.

(t.n.: For English translation see: <<http://www.mediamente.rai.it/mmold/english/bibliote/intervis/d/deker04.htm>>)

for an electronic epistolary exchange. But e-mail, which may seem familiar territory, is a radically different communication *space*. Words are, in fact, surrounded by a universe of “attachments” from *offline* experience: photographs and videos recorded on a cell phone to immortalize and document experiences, sounds and music that “relate” environments, feelings and impressions. Mail, a traditionally asynchronous means of communication, could also be used to send “snapshots” in real time: messages are sent from cell phones and from laptops while travelling, and the Web is (almost) always available. In this context, delay becomes a communication choice instead of a consequence of distance.

In Real Time...

The distance between old and new media is variable. Indeed, in the case of digital media, it is “fickle”. If we were to compare “pictures” of the communication infrastructure taken in 1997, 2002 and 2007 we would be faced with different environments. In the space of ten years, the Internet has been transformed from a rough muletrack into an authentic “information superhighway”. The bandwidth, the channel through which information is transferred, has become broader: The “old” 28 or 56 kbps modems have been progressively substituted by “broad band” with connections such as ADSL or via cable connections.

Bandwidth affects communication “richness”. If we could exchange/publish compressed texts and some low quality photographs with “narrowband”, often having to deal with large files flooding our e-mail box, with wideband we can surf in real time in three-dimensional environments and chat, exchanging answers through video instead of text. Furthermore, with regard to eTwinning, it is possible to organize synchronized lessons by means of videoconferencing or a shared blackboard, despite the physical distance involved. The “richness” of the latter context,² for example, lies in the possibility of creating a communicative experience using various channels – seen and heard – reintegrating certain aspects of “face to face” communication into distance interaction: voice intonation, facial expression, gestures and body language...

The Liceo Scientifico “F. Cecioni” in Livorno – a state high school – experimented the shift from traditional correspondence with a pen-pal to “conversation”, where four French teacher Marina Marino, used videoconference in an eTwinning context with the Lycée “Marguerite de Navarre” in Bourges.³



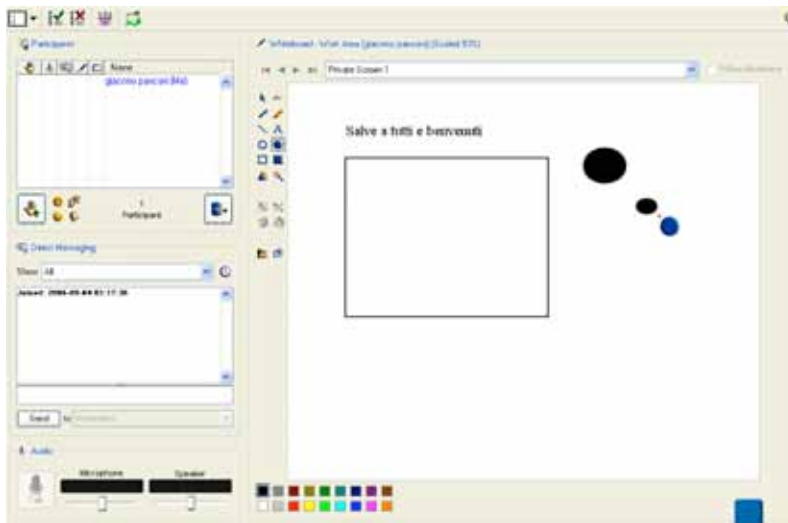
Liceo Cecioni (High School), Livorno. From a French lesson to conversation in videoconference: a possible space for an eTwinning experience

² For a better look at the theme of *media richness* see the page with the same name on Wikipedia, <http://en.wikipedia.org/wiki/Media_Richness_Theory> , consulted on 9 September 2008.

³ The multimedia documentation of the experience can be found on the website of the Italian National Agency for School Autonomy at <http://www.indire.it/galleria/docu/docu_b.swf>, consulted on 1 September 2008.

Nowadays, the technology required to incorporate a videoconference into a twinning project is not inaccessible in terms of cost or complexity of use. A few webcams and a free instant messaging programme such as Skype is enough.

The development of technological infrastructure is an invitation to build environments that are “more and more synchronous” for the mediated communication. The use of videoconferences marks a trend, even in the teaching sphere, towards a more “complete” communication through the sharing of writing tools – such as blogs and wikis – and working tools – such as the virtual blackboard, a programme through which it is possible to share multimedia files and work on them simultaneously.



Interactive multimedia board

However, for some years now, teachers has been able to make use of “physical” blackboards to share contents and tools. These are interactive multimedia boards, giant screens which serve not only to show text, images, videos and interactive resources, but also enable users to work on them, to use software and learning objects and surf the Web.



A virtual blackboard for content and tool sharing

This tool, which at first glance looks like a “digital version” of the old slate blackboard, may be used for distance learning to break down physical barriers in the classroom and let in those who are at a distance. Typically used in the classroom during everyday activities, the interactive multimedia blackboard is also highly effective in distance learning, as proved by certain international experiences. In particular it was used to promote educational progress in developing countries, as in the case of the Ulwazi Project in South Africa.⁴ In this project, the interactive multimedia blackboard acted as a technological bridge, providing access to education for young inhabitants of rural areas in the Pretoria neighbourhood. In fact, through a digital blackboard and a wireless connection, some teachers gave lessons from afar and interacted with the students, which would otherwise have had to bear the expense and strain of long hours of travel in order to be able to attend school.

In Italy, integration of the interactive multimedia blackboard for distance teaching methods was central to the MAR.IN.A.ND.O project,⁵ which twinned some schools in Tuscany with the lower secondary school on the island of Marettimo, in Sicily, which did not have enough teachers to guarantee the service.

Using a videoconferencing system combined with interactive multimedia blackboards, and involving the teachers of two lower secondary schools in Florence, it was possible to teach the children on Marettimo all their set subjects.

This experience, repeated and developed in subsequent years, is becoming a digital technology employment model to overcome the isolated condition of some students or even entire schools. But this same model may be tried out to build a twinning project that alternates asynchronous communication tools with activities in which all the partnered classes can participate in real time, not just as an extraordinary event, but as one of the many ways of learning. Use of the Interactive Multimedia Blackboard (IMB), in fact, has been spreading in European schools for some years now. Great Britain, where more than half the classrooms are equipped with an IMB, is the leader in this process, while countries such as France, Spain, Denmark and Italy, still in the initial phase of adoption of this technology, sustain its diffusion through specific interventions.⁶

Going Somewhere ...

In the course of digital communication infrastructural development, wideband diffusion coincided with a different way of interpreting connectivity: an intermittent time, bound by a use access increasingly available today at an all-in price. Potentially, communication digital instruments are always accessible and we can combine, rather than alternate, the moments we spend online, that is, our “life on the screen” (Turkle, 1997) and our life offline. In the same way, “state-of-the-art” technology provides more freedom of movement. Laptops were invented, mobile/cell phones developed into smart phones with advanced functions for internet connection. Most digital tool content is accessible though different devices and interfaces.

⁴ Project website: <<http://www.ulwaziproject.co.za>>, consulted on 5 September 2008.

⁵ To learn more about the experience see Linda Guarino and G. Moscato's contribution to this publication, “Marinando, la scuola da frequentare dove si vive”, 05/07/2007, [article], in Italian National Agency for School Autonomy (ex *INDIRE*), <<http://www.indire.it/content/index.php?action=read&id=1496>>, consulted on 1 September 2008; “Marinando: Scuole a distanza”, January 2008, [video], in *Indire.it / Video library*, <<http://www.indire.it/galleria/videoteca>>, consulted on 1 September 2008.

⁶ An important experience in Italy is the *Digiscuola* project, which provided this kind of technology to some high schools in Sicily, Campania, Puglia, Abruzzo, Molise, Calabria, Basilicata and Sardegna in 2006/2007.

Computing is ubiquitous and pervasive, serving our experience anywhere, “in any place and at any time” (Riva, 2004). The state of being *online* is becoming less and less a question of “going somewhere” – we don’t have to go and sit in front of a fixed location in our home, at school or in a lab – or “being in a place” – we don’t have to sit still in front of a screen. Communication mediated through digital technology can lead us to explore “real” experience space: in fact, we speak of “ubiquitous computing” to name an interaction model where the computer changes shape to adapt to concrete user contexts and needs.

eTwinning can use freedom of movement to construct, for example, experiences in the field, to share them in real time, to create involvement and participation in events and contexts that could be otherwise only related at a later date. Mobile technologies and ubiquitous computing have recently found their use in the structure of learning environments and mobile learning: some interesting ideas that are worth repeating can be drawn from this experience.

Mobilities, that is, mobile phones and palmtops are tools that may be used to share on-site teaching activities, such as exploring a particular location. For example, the ‘Create a Scape’ project, carried out in Great Britain in 2007, used geolocalizing technologies, the same adopted by satellite navigators, to help students and teachers create mediascapes, maps enriched with multimedia content. By using this map on palmtop computers, the students gave guided visits to places in their own city. The localization system distributes contents according to the context: for example, if the user is in front of a monument, the system transmits a description, an explanatory video, an audio piece and sounds to the palmtop.⁷

Mediascapes, or multimedia maps, obtained through Google Map act as “texts” through which a dialogue can be constructed, different points of view about (physical) places which come into contact through eTwinning. Instead of being an interactive guide with all the answers, the map can be improved with student questions relative to their peers’ hometown. Instead of being a caption, it becomes a space students can represent with a story: a personal one or an important fact in the history of a city, or a traditional local event set in that particular place.

Geographical or conceptual maps can be used as tools to collaborate in the exploration of the territory. This is what took place in MOULE, an experiment carried out at the Institute for Didactic Technologies in Palermo.⁸ Through the application developed in this project, a student in one PC location and a friend on the move, say, in the city with a mobile phone or a palmtop can interact in real time. From a distance, the student in front of the computer can follow his or her classmate’s “on-site” movements: both can communicate through messages or send each other pictures, videos and text files, which a geolocalizing system associates with visited “points of interest”.

⁷ *Create a Scape*, [web site], <<http://www.createascape.org.uk/home.html>>, consulted on 1 September 2008.

⁸ MoULe (Mobile and Ubiquitous Learning), [web site], <<http://moule.pa.itd.cnr.it>>, consulted on 1 September 2008.

Erstwhile New Media

The evolution of communication technology infrastructure through an ever-increasing bandwidth, connectivity, ubiquitous computing and the various interfaces has reshaped communication space mediated by ICT. With the possibility of communicating in real time and mobile communication, of being online anytime and anywhere, the idea of intermittency, of a “schizophrenic disorder” between what is real and what is virtual is rapidly losing ground in favour of an increased cohabitation and interpenetration of the two worlds. The metaphor of cyberspace seen as “elsewhere”, a place where utopia and dissociation lie latent (from Sherri Turkle’s description of life on the screen in 1997) may soon seem to have been taken from the yellowed pages of an old science fiction novel.

The technologies described in the previous paragraphs have also given rise to predictions from analysts and futurologists: Howard Reinghold⁹ predicts that ‘smart mobs’ (or mobile communication technologies) will transform us into a more intelligent, smarter society. Adam Greenfield¹⁰ believes our lives will be revolutionized by ‘*everyware*’, a neologism coined in the manner of hardware and software to emphasize the ubiquity of future technology.

More prosaically, however, these are emerging rather than futuristic technologies. They moved beyond the experimental phase some time ago now and are often no longer a niche product for a few technoenthusiasts, but actual means of “mass” or commonly used communication (think of mobile phones or satellite navigators). What has changed are the “situations”, their limits and our presence in them (Riva, 2004) – the environment where communication takes place and our way of adapting to it, the way we define our social presence, our consideration of the breadth of the context in which we can operate.

Outside the education environment, new technologies have already changed communication habits. Even the most “distracted” users who are not so computer savvy take pictures with their mobile phone and send them to a friend or a family member to include them in an event, to give them the chance to *be there* in mobile real time, despite the physical distance. It is harder to introduce these technologies into schools and on a more general level to integrate them in learning environments seen as contexts where pupils and students communicate, interact, produce contents and negotiate meanings (Calvani, 2000). It is hard to extract “erstwhile new” media, such as the computer desktop and Internet from the protected area of the computer lab (Biondi, 2007) and “naturalize” them as further learning and teaching tools.

Speaking of education in relation to technological innovation and cultural processes, there is a tendency to talk of a delay of the former with respect to the latter, or alternatively and more suggestively, of ‘digital disconnection’, which suggests that what is involved is not so much a delay as a gap: the distance between formal learning environments and the informal contexts in which younger people (but also the not-so-young) learn.

Bridging this distance with the traditional school system as we know it can be hard: infrastructural and organizational difficulties, individual attitudes and competences, lack of time and resources are all obstacles that must be overcome.

The eTwinning space, on the other hand, is an ‘extraordinary’ experience, a free zone based on distance and a territory just waiting to be invented: without this “invention”, which requires a choice of tools and organization of communication processes, be they mediated by old, new or state-of-the-art technologies, it is very difficult to actually bring an eTwinning environment to life.

In particular, the construction of an innovative space to experiment with new communication tools and models not normally used in traditional education becomes a

⁹ To learn more about Reinghold’s point of view, see Smart Mobs.com <<http://www.smartmobs.com/>>, consulted on 10 September 2008.

¹⁰ To learn more about Greenfield’s perspective, see Everyware <<http://www.studies-observations.com/everyware/>>, consulted on 10 September 2008.

research environment when cultural expression and competence are placed at the centre of the eTwinning project. Experimenting with new media in this sphere can, in fact, give rise not just to twinning “between places” but one between generations of *digital natives* (Prensky 2001), students born after the 80s who can handle these tools because they are used to the rapid course of “digital” innovation, and a generation of teachers for whom twinning meant exchanging letters with a pen-pal, but who can view the use of new technologies from a distance, discover its roots and put prognostications, be they enthusiastic or apocalyptic, into perspective.

Within this innovative sphere, personal or class stories can be communicated through social networks such as Myspace. Anyone can build their hometown in Second Life, make other people relive a historical event by accompanying them on a long-distance “walk” in the place where it happened. Art or Literature lessons can be taken together for a whole year, comparing national traditions, or an attempt could be made to identify contemporary cultural identity by researching the differences in the current historical context, which tends towards a general globalization.

Perhaps not everything will “go down in history” and some of the newest media forms will probably not last very long. However, eTwinning projects that experiment with milestones as well as innovation meteors create a precious opportunity: an adventure in the “spreading of present-oriented literacy”.

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**Project kits for the for the development of Cultural Awareness and
Expression: proposals from the Seminar working groups**





Arts and Crafts, let's meet in Piazza Europa

Schools involved: middle and primary schools
(maximum of three)

Age of pupils: 8-14

Language: English

Expected duration: two school years

Subjects: Environmental Studies, Arts and music, Industry, economics and the working world, Foreign languages

Specific Theme

The piazza is considered as a focus for aggregation, communication and the artistic and cultural expression of a people, and as a metaphor of dialogue and exchange.

the utopian piazza of the future with its arts and crafts and possible uses

- The piazza as a backdrop for the realization of fairy tales, stories, videos, strip cartoons, etc.

Brief Description

Analysis, investigation and sharing of what already exists today in order to imagine the future: one piazza in each partner city is examined in spatial and temporal terms. Possible aspects and perspectives to consider include: markets, shows, events, political meetings, spontaneous gathering together of local inhabitants, accounts of specific events, etc.; variations in architecture over time, seasonal changes, different pictorial and literary representations over time, etc. A utopian piazza is then conceived and built, with drawings, photographs, collages, graphics, strip cartoons, stories, descriptions, etc.

Final Outcomes

- Creation of a utopian piazza (graphic or metaphoric) that is a synthesis of real piazzas and imaginary elements, and where it is possible to meet and act virtually (Second Life, YouTube, Facebook, Netlog, etc.)
- Small publications/brochures analysing and summarizing various themes and summaries (*The Piazza*)
- Production of videos, happenings, theatre shows

Objectives

- To encourage aesthetic skills through artistic self-expression and participation in the socio-economic and cultural life of the cities concerned
- To develop creativity and imagination (starting from an understanding of the real situation and moving on to how it might be changed)
- To learn multimedia languages

ICT Tools Used and their Purpose

- Synchronous and asynchronous communication tools (blog, chat room, email, forum, etc.)
- Tools for collaboration and sharing (TwinSpace, wiki, blog etc.)
- Digital camera, video camera and image processing software
- Internet for research
- Audio conference
- Mp3 recordings (interviews, sounds of the piazza, music)

Envisaged Processes and Activities

First year:

- Research and gathering of information and pictures regarding the piazza
- Sending of pictures, information and various representations of the piazza to the partner
- Swapping of ten curious facts about the piazza with the partner
- Sharing of discoveries
- Historic, architectural, artistic and functional analysis of the piazza over time
- Drawing of the piazza *en plein air* (affective approach)

Second year:

- Selection of individual real elements and building of

Expected Results

- A solid understanding of one's own culture and increased openness to the diversity of cultural expression
- Ability to plan and create spaces (imagine a space)
- Acquisition of multimedia language skills

Documentation and Dissemination

- Involvement of experts from the local community, public presentations, including video conferences with the partner
- Web site and other web publications
- Possible interaction with the partner on the occasion of the chosen event (exchange, fair, video conference, etc.)
- Public TwinSpace and progress cards

Beauty In & Out



Schools involved: secondary schools

Age of pupils: 14-18

Language: English

Expected duration: one school year

Subject: Foreign Languages, Letters, Music, History of Art, History, Computer Science, Philosophy

Specific Theme

Young people's concepts of beauty

Brief Description

Pupils will exchange ideas about the concept of beauty in various cultures and historic periods by analysing a cross-section of artistic, literary, musical, advertising and photographic works and texts. Working in groups, the pupils will choose, together with the corresponding partner group, one aspect and period to explore. They will start by doing a historic and artistic analysis, adopting an interactive research – and activity-based approach agreed upon together with the teacher, then will develop their own creative representation of the concept of beauty. The ideas of beauty shared with the partners will be documented in a video.

Objectives

- To help the children express themselves and to consider the concept of beauty in order to learn about and accept diversity and to develop a fuller acceptance of otherness
- To develop artistic skills

Envisaged Processes and Activities

- Sharing and discussion of teaching practices between teachers
- Interactive and communicative activities between pupils
- Making of videos
- Video conference

Final Outcomes

A series of 10 videos illustrating the 10 notions of beauty explored together with the partners.

ICT Tools and their Purpose

- E-mail
- Chat room
- Forum
- Blog
- Wiki
- Video
- Video conference

Expected Results

- Greater aesthetic and artistic appreciation
- Development of the propensity to engage and cooperate with others
- Acquisition of artistic skills
- Stimulation of creativity

Documentation and Dissemination

- Web site of the schools and the project
- Blog
- TwinSpace and progress cards
- Posting of the videos on line



Virtual Gallery

Schools involved: secondary schools

Age of pupils: 14-17

Language: foreign languages and Italian

Expected duration: one school year

Subjects: Italian, Foreign Languages, Drawing and History of Art, Computer Science, History, Philosophy, Religion, Others, according to the chosen theme

Specific Theme

Art in cities

Brief Description

Creation of a virtual gallery containing art works, monuments, buildings and places of interest in the two partner cities, photographed, drawn or filmed and commented on by the pupils. The works will be chosen according to "theme-based paths" chosen by the teachers of the subjects concerned (e.g., historic themes or issues relating to a specific current in art, or places given over to a particular practice or form of worship, etc.). In the second phase of the project, the gallery will be extended to include the creative work of the pupils themselves, inspired by the themes, places and monuments they have studied. The activities will be as interlocking as possible, so as to involve both classes (e.g., the comments on the works of a country could be posted by pupils of the partner school, or the drawings and reproductions of the monuments of a city could be inserted by the partner).

Objectives

- To valorize and enhance appreciation of the cultural and artistic heritage through conscious observation and the ensuing creative work
- To learn the language of specific fields (both in Italian and in foreign languages)
- To reinforce the idea of the European cultural dimension and to develop an appreciation of the local cultural heritage
- To involve the local community

Envisaged Processes and Activities

- Detailed planning of the programme by the teachers involved (both national and transnational)
- Selection of thematic lines of inquiry
- Division into work groups and assigning of roles
- Gathering of materials (videos, sound recordings, images, etc.), accompanied by basic information

- Exchange of materials with the partners, followed by interactive activities (synchronous and asynchronous) designed to explore the themes more fully
- Video conference with an outside expert (who could also be replaced by a pupil or group of pupils from the partner class, who would provide their foreign counterparts with the information required to realize the gallery about their city)
- Production of personal creative work
- Realization of the gallery

Final Outcomes

- Virtual gallery of the city and the creative work produced
- Other possible outcomes: audio guide, brochure, booklet, advert

ICT Tools Used and their Purpose

- e-mail, chat sessions, forum
- Specific multimedia tools (MovieMaker, Podcast, Slideshow, etc.)
- Video conference
- YouTube, web sites or other for hosting the galleryTwinSpace

Expected Results

- Appreciation on the part of pupils of the importance and specificity of their cultural and artistic heritage through interaction and an exchange of knowledge, experiences and feelings
- Fostering of the notion of active citizenship through the valorization of the cultural and artistic heritage
- An enhanced aesthetic sensibility and recognition of the importance of art values for the development of civilization

Documentation and Dissemination

- Involvement of experts from the local community; public presentations, including video conferences with the partner
- Possible interaction with the partner during the chosen event (exchange, fair, video conference etc.)



The Artist in me: from Artwork to Mural

Schools involved: lower secondary schools

Age of pupils: 13

Language: English

Expected duration: one school year

Subject: Art and images, History, Geography, Technology, Mother-tongue language, Language of communication

Specific Theme

Investigation of a specific historic and artistic period in the curriculum

Final Outcomes

- Interactive art gallery
- Mural
- School logo (derived from the mural)

Brief Description

Taking as a starting point a specific historic period chosen together with the partner school, the pupils create a blog with various kinds of artwork produced by representative artists of the chosen period. The students use the blog to choose a work on which to work creatively, then reinterpret that work in order to produce a "mural".

ICT Tools and their Purpose

- Synchronous and asynchronous communication tools (e-mail, chat sessions, forum, etc.)
- Blog
- Internet for research
- Various other equipment (camera, video camera, scanner, etc.)

Objectives

- To help pupils to learn about and appreciate art works
- To sensitize pupils to reading art works
- To develop critical and creative skills
- To develop artistic skills and competences

Expected Results

- Discovery of the cultural heritage of one's own country and that of the partner
- Appreciation of the relationship between art and history
- Acquisition of techniques for artistic expression
- Increased confidence on the part of pupils in their own expressive and creative abilities

Envisaged Processes and Activities

- Choice of the historic period, via e-mail, a forum, chat room sessions, etc.
- Selection of the representative artists and works of the period (via the blog)
- Study of the work, artist's ideas and technique
- Study of the historic/literary/artistic period (group work–internet research)
- Creative and personal reinterpretation of the chosen work
- Creation of an interactive art gallery on the web site with all the pupils' work
- Selection of a work to realize as a mural
- Realization of the mural

Documentation and Dissemination

- Web site
- Blog
- TwinSpace and progress cards
- Adoption of the logo



The oil road: past and present

Schools involved: primary schools

Age of pupils: 5-12

Language: English

Expected duration: two school years (1 hour a week)

Subjects: all

Specific Theme

typical local products

Brief Description

Taking knowledge of the local area as a starting point, the pupils focus on a characteristic and typical local product (e.g., olive oil in many Mediterranean countries), and the economic, environmental and agricultural aspects associated with its production are analysed. In the second phase, the emotional and cultural implications of the product (oil and the olive tree in the tradition of my land, but also the tree as a living element in my environment) and the creative aspect are developed, with the realization of personal outcomes (images, videos, music, etc.).

Objectives

- “To cultivate aesthetic capacity through artistic self-expression and participation in cultural life.”
- To develop “a solid understanding of one’s own culture, [...] “the basis for an open attitude towards and respect for diversity of cultural expression.”

The quotations are from the *Recommendation of the European Parliament and of the Council of 18 December 2006 on Key Competences for Lifelong Learning*.

Envisaged Processes and Activities

First year:

- Brainstorming with the classes to collectively motivate and identify the aims
- Research and production of simple summary cards to present to the partner school via mini video-conference lessons and to send later
- Designing and production of a brochure illustrating the oil production chain for the partner country

Second year:

- Exchange of images, music and poetry in order

to discover feelings and with a view to producing a personal piece of work

- Exchange of images, music and poetry in order to discover feelings and with a view to producing a personal piece of work

Final Outcomes

- 1st year – brochure to publicize the product (olive oil) of the twinning school
- 2nd year – slide show and multimedia products gathered together on a DVD and made available online

ICT Tools Used and their Purpose

- Video conference (presentation of classes and materials)
- Word (production of texts)
- Power Point (multimedia presentations)
- Paint (graphic outcomes)
- Nero (for the production of DVDs)
- MovieMaker (for the production of DVDs)

Expected Results

Knowledge of the partner country and an increased awareness of similarities and differences.

Documentation and Dissemination

- Gathering together of documents and outcomes on CD and DVD
- Publication on the school’s site and on TwinSpace



Today I'll have some fun

Schools involved: primary and secondary schools

Age of pupils: 9-10 and 14-16 (the project might also involve different levels of school)

Specific Theme

Valorization of one's own local area and that of the partner school

Brief Description

The pupils produce a virtual map of the partner school's city on the basis of areas of interest identified through a cross questionnaire. If schools of different levels are involved, the older children will produce the map and interview the children of the partner school to find out what their interests are, what kind of map they want in relation to their needs (playgrounds, ice cream parlours, parks, sports' fields, swimming pools, shopping centres, meeting places, other attractions, etc.). In order to pinpoint suitable places and to respond to the needs expressed by the foreign children, the pupils can also consult children in their own country (at school or home). If a primary school is involved, the younger pupils will contribute by expressing their interests and needs, backed up by podcasting, drawings, videos, etc. In the case of classes of the same level, the project can be adapted to the skills and age of the pupils, with reciprocal activities (e.g., realization of the map of the partner city on the basis of the partner's interests).

Objectives

- To get to know and to interact with pupils of other countries
- To critically and creatively consider one's own city and culture
- To develop creativity
- To develop language skills and cognitive and procedural abilities

Language: lingua franca

Expected duration: one school year

Subject: Mother tongue, Foreign language, History, Art, Geography, Mathematics, Science, Computer, Science

Envisaged Processes and Activities

- Preliminary contact, with an exchange of personal information between the pupils and planning of the project (2 months)
- Identification of areas, division into groups, exchange of cross questionnaires (1 month)
- Information gathering and exchange (1 month)
- Preparation and exchange of maps, with links (1½ months)
- Final realization of virtual and paper versions (1 month)

Final Outcomes

- Virtual maps of the two cities (and paper version)
- Placemats and T-shirts with maps (for fundraising and possible sponsors)

ICT Tools and their Purpose

- eTwinning portal for collaborative and exchange activities
- e-mail (public and private)
- Chat rooms sessions for informal exchange of ideas between colleagues
- Webcam for filming in class
- Video conferences for communicating
- Internet, Photoshop and graphics software for producing the final outcomes

Expected Results

- Greater awareness of the characteristics of one's own and the other city from both a cultural and social point of view
- Improvement of language skills
- Improvement of artistic skills
- Improvement of ICT skills
- Improvement of social skills

Documentation and Dissemination

- School and local media
- Participation in events (e.g., orientation fair)
- TwinSpace and progress cards
- Distribution of final outcomes (placemats and T-shirts) during school and local events



We Plog

Schools involved: secondary schools
Age of pupils: 17

Language: English

Expected duration: 6 months

Subjects: History, History of Art, Letters, Languages, Computer Science, Law

Specific Theme

The communication of emotions

Brief Description

The aim of the project is to encourage pupils to observe and communicate their feelings through the use of mass technological tools such as digital cameras and cell phones. The original idea for the project stemmed from the observation that communication between adolescents is based on codes dictated by technology and mass-media fashion: although different from the adult world, the language, slang and means of expression used tend to standardize the world of young people through a form of cultural and communicative globalization. While the widespread use of SMS, MMS, chat rooms and blogs reflects a powerful need to communicate, they are also standardized. The idea was therefore to give a specific shape to the project by focusing on the image and its perception, transforming the idea of the blog into the photo-blog, hence the word 'plog', which means photographic diary. The pupils are free to photograph the surrounding world as it appears to them, focusing on what stimulates their perceptual curiosity.

Objectives

- To communicate feelings through creative self-expression
- To encourage the pursuit of critical lines of investigation through the identification, analysis and understanding of images and creative forms of expression
- To transform feelings into positive and constructive attitudes

Envisaged Processes and Activities

- Organization into groups:
 - Moderators' group
 - Progress card group
 - Foreign relations group
 - Coordinator/supervisor of groups
- ... Production of photographic images
- ... Creation of the framework for the plog
- ... Selection of themes for further exploration
- ... Creative work
- ... Posting of the outcomes on the plog

Final Outcomes

Creation of an online photographic blog, hence the name photo-log: plog

ICT Tools Used and their Purpose

- eTwinning platform/TwinSpace
- Cameras
- Scanner
- Image processing software
- School web site
- Blog/plog

Expected Results

One of the aims of the project is to give pupils the possibility of discovering the social communication potential of the technological tools they use on a day-to-day basis, in other words how they can be put to intelligent use. "Discovering" the world through the eyes of their peers could be a means of stimulating personal growth and initiating genuine intercultural dialogue.

Documentation and Dissemination

- Final outcome on the web
- Plog
- Publication on TwinSpace
- Contact with the mass media on the part of the external relations group and involvement of the local community

APPENDIX



Methodological note on the workshop organization

by *Alexandra Tosi*

eTwinning National Support Service (ANSAS, formerly Indire)

A practical-operational approach was applied during the 2007/2008 eTwinning seminar workshops, privileging peer learning and learning by doing. Teachers were divided into subgroups consisting of 6-8 people and grouped according to subject taught, school type and student age to promote more active and constructive teacher participation, thanks to the limited number of participants and the sharing of interests and needs. Various work methodologies were alternated to hold the interest of the participants and guarantee work variety and vitality: brainstorming moments, round tables, subgroup work, exposition to the rest of the participants, individual reflections etc. Tight, well-defined deadlines reduced energy dispersion and digressions to a minimum.

Teachers were asked to elaborate a project idea starting from a few sentences taken from the description of the three chosen key competences contained in the European Recommendation (December 2006). The project had to focus on the assigned key skill by identifying the most suitable goals and methodologies for student development.

With the help of worksheets, the groups first attempted to analyse previous eTwinning experiences to bring out the difficulties met in the past (Workshop 1: “Getting to know each other and evaluation of previous eTwinning experiences). Starting from each participant’s personal analysis, teachers were then asked to elaborate new project ideas in collaboration with their colleagues and to apply the possible solutions discovered during the course of their previous group work to their planning process, taking into account group member experiences and characteristics as well as the selected key competence (Workshop 2: “Conceiving a project”). A simulation of all the planning phases followed, from brainstorming ideas for further development, to the preparation of a first project draft, proceeding with partner intermediation and joint drafting of activities (Workshop 3: “Twinning and Project simulation”). The workshop results can be found in the “kits” included with each section of this publication.

An important workshop management figure was that of the subgroup “facilitator”, who had to introduce, explain and coordinate the various activities, make sure deadlines were met, moderate discussion participation and guarantee consistency with related themes and activity goals. The facilitator’s role was therefore both significant and complex, having to guarantee a “constructive” yet “discreet” presence, intervening in deadlock moments and conducting participant focus back to the case in point when the discussion digressed, guiding towards goal achievement, guaranteeing the participation of all those present, even the most reluctant, while trying not to be too intrusive or influence subgroup work (even by over-monopolizing the attention of participants who often tend to behave passively when relating to “institutional” points of referents). The facilitator’s role was therefore essential for the success of these eTwinning seminars. To this regard, we would like to thank eTwinning Office members, Donatella Nucci, Tommaso Mannelli, Alessandra Ceccherelli, Silvia Dell’Acqua, Alexandra Tosi and Valentina Bianchini as well as all those who pitched in to help us reach our goal: Maria Teresa Asprella Libonati, Paolo Baroni, Marilena Beltramini, Laura De Paolis, Francesco Di Cataldo, Patrizia Giangregorio, Ermelinda Guarino, Giovanna Guslini, Maria Gabriella La Rocca, Antonio Loddo, Luisa Lusso, Emanuele Manfredini, Rosario Sergio Maniscalco, Loredana Messineo, Rita Del Favero, Gabriella Orlando, Alessandro Porcelluzzi, Marialuisa Sabino, Aurelia Speciale, Aurora Tabone and Filippo Viola.

This methodology was successful not just due to the quality of the conceived projects, but because of the activated process, the active participation of the teachers who played the leading role the entire time, exchanging ideas and advice and hence learning from

other people's experiences; which goes to show the creative strength that can be derived from collective intelligence and the motivational boost that can come from a sense of belonging to a practical community such as the one formed by eTwinning teachers.

The methodology was "refined" during the course of the three seminars and corrected along the way on the basis of participant suggestions and facilitator experience – such as, for example, when it came to defining deadlines – and it was subsequently used for the final MedTwinning seminar and by regional officials during provincial and local eTwinning conventions. In fact, the seminar structure proved to be highly flexible, adaptable to various situations, contexts and needs (through simplification or integration, adaptation of worksheets to the discussed themes, consolidation with other activities, if any, etc.).

For a more comprehensive view, all the worksheets, facilitator guidelines and questionnaire evaluation results used during the workshops have been included with this volume, in the hope that they may come in useful to anyone who is interested in using this model, adapting it to their specific needs.

eTwinning Seminar 2007-2008

Workshop Guide For Facilitators

The aim of these workshops is to encourage active participation from members in order to define the 6 new projects dedicated to the three chosen thematic areas:

- Mathematics, Science and Technology
- Social and Civic Competences
- Cultural Awareness and Expression

The project plan, presented during the concluding plenary session by one of the participants, must be complete and ready to be used. Therefore, all the project phases, from conceptualization to implementation and documentation, must be developed.

All of the above takes place in a manner similar to the one adopted in an eTwinning project plan, alternating personal reflection with discussions in small groups of about 7 people, led by a facilitator and equipped with a laptop to support their work.

The facilitator must grasp the general purposes of the workshop, coordinating group work, distributing material and guaranteeing respect of deadlines (which must be respected to the second!). Moreover, the facilitator has the important task of leading the discussion towards a positive conclusion, placing the purpose of each single proposed activity at the centre and steering participants back to the central discussion when they digress.

The subgroup coordinated by the facilitator is composed of about 7 people, who express a specific preference for the same theme and teach in more or less similar kinds of schools.

In general, the workshops are formulated around the three activities illustrated below:

Workshop 1: Helping participants to get to know each other, encouraging them to reflect on their eTwinning experiences.

Workshop 2: Conceive a new eTwinning project, focusing on the chosen subject, envisaging an effective and captivating strategy with the aim of proposing the idea to a hypothetical partner.

Workshop 3: Plan the activity together, going into the operational details of the project.

However, intermediate activities between one workshop and another require a different working structure.

The end of Workshop 1 must be followed by a **detailed analysis of recurring eTwinning problems**. In fact, this workshop highlights the most recurrent problems: the facilitator will then select the most important ones, which will subsequently be assigned to a theme-based workgroup. Based on their experience (and temporarily abandoning their subgroup for this activity alone), participants can decide which theme-based workgroup to take part in on the basis of their own experience.

The end of Workshop 2 is followed by a **twinning process simulation**: each with their own idea, subgroups will represent a partner school and partner with another subgroup, supporting and listening to partner criticism, in order to arrive at a common theme that will be expounded in the plenary session as the main project idea and will lay the foundation for Workshop 3.

Workshop conclusion

At the end of Workshop 3 a maximum of 5 slides must be produced for a plenary presentation of the work by one of the participants.

Detailed Workshop Schedule

Workshop Session 1 (2 h)

Getting to know each other and evaluation of eTwinning experiences

A – GETTING TO KNOW EACH OTHER

Distribute Worksheet A

Purpose: ice breaking

Activity: Working in pairs participants get to know each other (6 min.), then each person introduces their fellow member to the subgroup (2 min. per person).

Time: 20 min.

B – EVALUATION

Distribute Worksheet B

Purpose: Evaluation of previous experience in relation to the aspects shown on the worksheet (strong and weak points, curricular integration, change factors, encountered difficulties)

Activity:

Activity 1 – Individual reflection following the prompts on worksheet B. Answers must be written on the sheet in note form, particularly with regard to question D, which will be tackled later (10 min.).

Activity 2 – A group round table to answer questions A, B, C (2 min. per question per person, ca. 50 min.).

Time: 1h

NB: Ask members to fill in the fourth question first and collect papers right away. While members are answering the first 3 questions, facilitators identify the 4 most recurrent difficulties and write them down on a large sheet of paper. They will then assign one difficulty to each table. Once they finish working on worksheet B, teachers choose which problem they would like to investigate and take their place at the relative table.

C – FOCUSING ON DIFFICULTIES

Distribute Worksheet C – **CHANGE OF TABLE AND GROUP**

Purpose: To focus on possible problems and their solutions (in-depth analysis of question D)

Based on the problems that each person indicated on their card, 4 groups are formed according to the four most recurrent problems.

Activity:

Activity 1 – Group discussion aided by grid C (ca. 20 min.)

Activity 2 – One spokesperson for each group expounds possible solutions to the problem discussed in the group (ca. 10 min.)

Time: 40 min.

Workshop Session 2 (1 h and 40 min.)

Project conceptualization and twinning simulation

RECOMPOSITION OF INITIAL SUBGROUPS

A – CONCEPTUALIZATION

Distribute Worksheet D

“Lucky dip” – sentences from the European Recommendation on key competences (see enclosure) are drawn for each group. A representative for each group must draw a phrase with a theoretical concept and another sentence with a practical idea for the group theme, which will be developed in a subsequent phase.

Purpose: to create a new project

Activity:

- 30 min. brainstorming of ideas linked to the sentence and theme
- 5 min. to put the resulting ideas in order and choose the best one
- 25 min. to devise a project idea and study it in more depth on the basis of Worksheet D (curricular integration, collaboration with other teachers, feasibility, adaptability, strategy to be proposed to the partner)

Time: 60 min.

A spokesperson for each group is appointed for the next phase

TWO SUBGROUPS PARTNER FOR A TWINNING SIMULATION

B – TWINNING SIMULATION

Subgroup couples twin up, expounding the idea and contrasting it until they finally agree on a common idea.

Purpose: to simulate a real schools' twinning

Activity:

5 min to expound group idea of partner1 (spokesperson)

10 min "devil's advocate": brainstorming questions to evacuate critical elements in the idea presented by the other group

5 min to expound group idea of partner 2 (spokesperson)

10 min "devil's advocate": brainstorming questions to evacuate critical elements in the idea presented by the other group

10 min to stipulate a definitive agreement and define the common idea

Time: 40 min.

Workshop Session 3 (1h and 30 min.)

PLANNING and preparation of final

PARTNERED SUBGROUPS WORK TOGETHER

A – PLANNING

Distribute Worksheet E

Purpose: To define a common project plan

Activity: Subgroups plan the project on the basis of the prompts provided on the card (curricular integration, use of ICT, collaboration workbench, documentation, activities, etc.)

Time: 50 min.

B – SLIDES for plenary session

Distribute Worksheet F

Purpose: presentation of outcomes

Activity: All the established content must be summarized in the slides required for the plenary presentation

Time: 40 min.

Appoint a spokesperson for the plenary session. Each will have 5-7 minutes for their speech.

Worksheet A	Workshop 1
Activity 1: Getting to know the person next to you	
Working method: pairwork	
Activity 2: Present the person next to you to the group	

Outline for the presentation

Using the information exchanged in the course of the mutual getting-to-know-you session, present the person next to you to the group, following the following framework.

Name and surname of the person next to you at the table	
Level of the school where he/she teaches	
Subject taught	
Age of the pupils involved in his/her eTwinning programme	
The key elements , in your opinion, of his/her eTwinning project (subjects, collaboration with colleagues, successes and difficulties, salient features, etc.)	

Worksheet B	Workshop 1
Activity: Evaluating the experience	
Working method: individual	
<p>NOTE:</p> <p>ANSWER QUESTION D FIRST. Detach and hand in before continuing</p>	
Individual report for answers A, B and C	

Collect together your ideas and get ready to tell your group about some of the most interesting aspects of your experience of eTwinning. Consider the following 3 questions in particular:

A – Can you identify at least one strong point and one weak point of your project?

Strong point _____

Weak point _____

**B – Curricular integration: how has it been effected?
If there is no such integration, why not?**

Presence of curricular integration:

Absence of curricular integration:

C – What have you learnt from eTwinning? How has your teaching approach changed?

Factors of change for the teacher

D – In the space below, briefly list the four main difficulties/problems you encountered. These will form the basis for the following activity.

- 1 _____
- 2 _____
- 3 _____
- 4 _____

This question will form the basis for the following activity. Make sure you complete it!

Worksheet C	Workshop 1
Activity: Focus on difficulties	
Working method: in groups	

Title:
I HAVE CHOSEN TO GIVE FURTHER CONSIDERATION TO THE FOLLOWING DIFFICULTY...

-
- 1) **Describe the problem, saying who was involved and how and when it took place.**

 - 2) **What, in your opinion, are the factors, issues and major levels involved in the problem?**
 (people, organization, culture, equipment, outside forces, etc.) Why and in what way have each of these factors contributed to the problem?

 - 3) **What are the possible solutions at the various levels?**
 (indicating people to involve, equipment to request, possible strategies,etc.)

 - 4) **What might be the consequences of the proposed solutions?**
 (evaluation and selection of the solutions)

 - 5) **DECISION**
 It might be possible to solve the problem described above in the following ways:

.....

.....

.....

.....

.....

Worksheet D	Workshop 2
Activity: Conceiving of a new project	
Working method: in groups	

Developing a project idea and a strategy for proposing it effectively

TITLE	
Brief description	
CURRICULAR INTEGRATION How do the envisaged activities fit into the educational programme? Will extra-curricular hours be necessary to realize it?	
COLLABORATION WITH OTHER COLLEAGUES Which colleagues? And how do you think you will involve them in realizing the project?	
FEASIBILITY Is the project really feasible in your school context? Possible aspects for consideration: amount of time available for the project; collaboration with other teachers; support of the class council, of families and the headteacher ; achievement of objectives ; pupils' level of skills before and after; equipment available at the school; access to computer labs, etc.	<i>Time:</i> <i>Involvement of other people (including people outside the school):</i> <i>Compatibility of the project with school equipment:</i>
ADAPTABILITY (horizontal and vertical transferability) Can the project be used by other classes in other contexts ? Can it be adapted to classes from different school levels ? Is it sufficiently flexible to be adapted to any changes or unexpected circumstances in the course of the project?	
STRATEGY FOR PRESENTING A PROJECT IDEA TO A POTENTIAL PARTNER Which points absolutely have to be communicated to a potential partner? Identify the fixed points of your project idea (which you are not willing to see changed) and those which could be modified depending on the needs of the partner.	

Worksheet E	Workshop 3
Activity: Planning	
Working method: 2 twinned groups work together on the same project idea	
The groups produce a shared worksheet	

PLANNING

Approximate time schedule: 10 min. per answer

TITLE	
Brief description	
Goals and objectives	
ENVISAGED PROCESSES AND ACTIVITIES including time schedule and a calendar of activities	
CURRICULAR INTEGRATION Which teachers of which subjects will be collaborating? Which part of the school curriculum will be deepened and developed, and which subjects? How are you thinking of securing the collaboration of your colleagues?	
ORGANIZATION OF ACTIVITIES Role of pupils and their division into groups; distribution of tasks and responsibilities between the two partners; involvement of external experts (if applicable); contacts with figures in the local community, etc.	
PLANNING OF THE COLLABORATION How will the collaboration be effected? Frequency and means of contact with foreign colleagues and between pupils	
APPROPRIATE ICT TOOLS Which ICT tools will be used to realize the aims of the project? Are they really appropriate for the envisaged activities? What additional value do they have in comparison to other tools? Which ICT tools and for what educational purpose?	
DOCUMENTATION How do you intend to publicize the activities and the results of the project? On-going documentation (of methods used, organization of activities, results obtained, difficulties encountered, etc.) End-of-project documentation (final outcomes, final report on results, difficulties, etc.)	

Worksheet F	Final session
<p>Activity:</p> <p>Preparation of a Power Point presentation for report in plenary session</p>	
<p>No. slides: max. 5</p> <p>The presentation in the plenary session will last 5 minutes</p>	

Results and evaluation of workshop 1: difficulties encountered

by Alexandra Tosi

eTwinning National Support Service (ANSAS, formerly Indire)

One of the activities proposed to teachers participating in the three eTwinning seminars regarded the problems they encountered during the course of eTwinning projects and through to completion.¹ In fact, it was the general consensus that it would be impossible to achieve the desired level of quality without analysing these problems and searching for possible solutions. Teachers were therefore invited to bear previous experiences in mind and plan the new project in such a way as to avoid finding themselves in the same situation. Guided analysis and problem-solving tools were provided to “train” teachers to search for solutions independently, while providing moments for debate to stimulate discussion and collaboration with colleagues who had encountered the same difficulties in the past.

This exercise proved to be particularly useful, as demonstrated by the lively discussion and the quality of the solutions found by the entire work group. Teachers often do not have the time or possibility to stop and devote some critical thinking to their own work, exchanging perspectives with their colleagues. But through group work and teacher collaboration the participants found solutions and ideas that were or had been applied in similar contexts and found inspiration in situations different from their own that could be readapted to the case in point. Within this dynamic, the individual can rely on group experiences and ideas to collectively reach a higher level of knowledge with respect to the beginning of the process. The solution proposed by an individual teacher was automatically discussed and compared with different realities where it could be applied. Feasibility was subjected to individual and collective analysis and once the idea was “digested” and adapted to the pertinent context, it became part of the stock of experience of each group member.

The main goal of the workshop was to make teachers understand that often finding a solution is not as impossible as it seems, that a careful analysis of the situation, a proactive attitude and close collaboration with colleagues can lead to satisfactory albeit partial solutions for most problems.

At the end of the workshop we collected the worksheets of those teachers who voluntarily agreed to share their responses, totalling 168 answers to the open question, *“Write down the four main difficulties/problems you encountered during the course of the project”*.

The answers, similar in all three seminars, revealed that problems were mostly concentrated in five macroareas. Although only a portion of the overall worksheets were taken into account, the number of answers gathered make a sufficient sample for an initial analysis of the surveyed results, which are shown below and which, along with the comments collected during the years of activity of the eTwinning helpdesk and the outcome of the workshops themselves, can come in useful to the Italian eTwinning Unit in order to provide teachers with more incisive support.

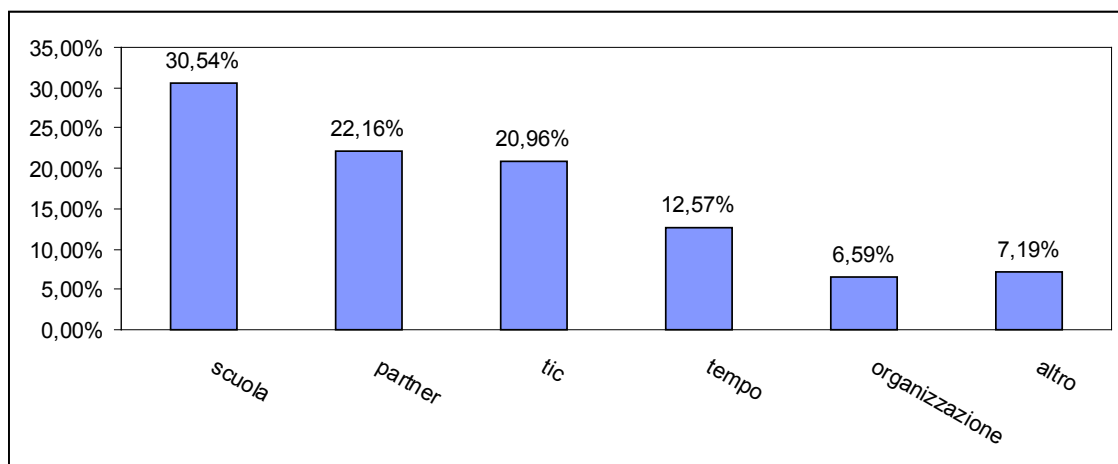
The identified macroareas correspond to the difficulties encountered in: 1) relationships with colleagues in one’s own school and the head teacher, 2) communication and

¹ Card B, question D and card C of the workshop dedicated to the analysis of previous experiences, see appendix on seminar structure.

management of relationships with foreign partners, 3) use of ICT (both due to a lack of tools on the school premises and limited teacher computing skills, 4) activity time management, 5) practical organization of activities (from planning to management and dissemination).

Problems relative to the management of the project within one's own school, particularly with regard to relationships with colleagues, definitely hold first place, amounting to more than 30% of the answers. Problems linked to the management of relationships with foreign partners and the use of ICT come a clear second (around 21.5%). Difficulties relative to activity time management were also quite significant (12.5%), as well as operational problems linked to the organization of the activities, albeit with a more significant drop in percentage (6.5%). Little more than 7% of the answers highlighted other problems that did not fall within these macroareas, but their magnitude was not considered relevant enough to justify their inclusion.

Since the answers were "open" and grouped subsequent to the survey, answer concentration in the above-mentioned macroareas is even more revealing and relevant, even in the case of smaller percentages.



Below is a detailed account of the difficulties teachers encountered during the workshops with reference to the above-mentioned macroareas.

SCHOOL: *relationship with colleagues and the head teacher (30.5% of indicated problems)*

The difficulties indicated by teachers in the "school" macroarea can be divided into two categories, *management of relationships with colleagues* and *management of relationships with the head teacher*. The highest percentage of answers in this macroarea, amounting to 82%, (which makes for 25% of the total), highlights the considerable difficulties encountered by teachers in attempting to involve other teachers both in the creation of an inter-curricular project and in sharing the responsibility and workload. According to the participants, this is due to a widespread resistance to change, a generally scarce sensibility towards the European educational dimension and innovative experiences and, above all, the lack of financial or even simply professional recognition that would justify the additional work a teacher ends up doing or having to do. This often translates into insufficient "active" support from colleagues and the class council, a feeling of isolation and sometimes even hostility in teachers involved in projects such as eTwinning.

Eighteen percent of the answers gathered in this macroarea (5.5% of the total) show

that even school management staff sometimes show little interest in and sensitivity towards the European educational dimension and in particular, towards unfinanced initiatives such as eTwinning, which is why eTwinning activities are often left to individual enterprise and are not encouraged and promoted enough.

PARTNERS: *difficulty in finding a partner and in the management of fruitful relationships (22% of indicated problems)*

There are various aspects to the difficulties regarding the “partner” macroarea. They can, however, be similarly grouped under two main headings: *the search for a partner* on the one hand (26% of indications gathered in the macroarea, 5.7% of the total) and *fruitful partner relationship management* on the other (74% of answers, 16.3% of the total).

With regard to the first aspect, many teachers stressed the difficulties encountered in choosing the “right” partner, one that has to be compatible with the home situation both from a professional and operational point of view (scholastic level, subjects, technological tools and skills, teaching methodologies, goals etc.) and from a personal and motivational one (affinity, reciprocal regard, motivational and commitment balance).

The main problems in the management of partner relationships lie in: the organization of collaborative activities due to the partners having different tools, skills, calendars, available hours, goals etc.; the coordination of numerous partner; the respect of established deadlines and rhythms and finally the partner communication, which is often inconstant and occasional, abruptly and unjustifiably interrupted for too long or generally hindered and slowed down by misunderstandings and cultural differences.

ICT: *available tools and ICT teacher use skills (21% of indicated difficulties)*

ICT problems can also be divided into a few sub-categories: *available tools*, which covers total absence, shortage, malfunction or inaccessibility, amounting to 56% of surveyed results (11.8% of the total), *ICT use skills*, which levelled at 32% (6.7% of the total) (mostly referring to participating teachers, but relating to partner teachers as well) and the use problems and scarce appeal of the *eTwinning platform*, amounting to 12% of the answers (2.5% of the total).

TIME: *management of personal time and available school hours (12.5% of indicated difficulties)*

Teachers indicated the time factor as a difficulty in terms of *school hours* available for teacher and students during the scholastic year (52% of answers, 6.5% of the total), which are insufficient to cover project activities as well, except to the detriment of the “ordinary programme”; in terms of investment of the teacher’s *personal time* (24% of answers, 3% of the total) in the project on a voluntary basis outside school hours; and finally, in terms of *respect of working deadlines* and rhythms (24% of answers, 3% of the total).

Teachers identified the main causes of this problem in the difficulty of integrating these activities into the school curriculum, the vastness of the school programme and the shortage of hours that can be “dedicated” to the eTwinning project, especially for language teachers who have few hours available every week, scarce colleague collaboration and work coordination between dissimilar partners (classes belonging to different levels and specializations, a lack of balance between teacher and student skills and partner relationship problems).

ORGANIZATION: *operational planning of student activities (6.5% of indicated difficulties)*

Finally, answers regarding the organization of activities were more varied, highlighting difficulties in the organization of student activities: subdivision in work groups, entrusting of roles and responsibilities, balance between group work and individual, autonomous work, planning of activities and establishment of deadlines, division of tasks between

work and school and extra school work, and coordination of the work carried out by different classes.

OTHER (7%)

Among the other indicated problems there is low student motivation, difficulty in finding a good idea, insufficient student and/or teacher language skills, difficulty in coordinating eTwinning activities with those in the *Comenius* project and in finding funds to organize meetings in person.

An overall interpretation of the surveyed difficulties and an analysis of the solutions, carried out by the teachers themselves during the course of the workshops, leads to the conclusion that the aspects analysed so far are obviously closely linked to each other and that an improvement in one sector will increase the possibility of overcoming difficulties in others. We therefore tried to find a common denominator among these difficulties and proposed solutions, identifying a series of possible interventions by the Italian eTwinning Unit that could improve overall project quality and provide better support to teachers in solving the outlined difficulties:

- 1) increasing occasions for training and improving teacher support by focusing on:
 - the search for a partner
 - planning of activities
 - use of ICT in teaching
- 2) increasing awareness on a local level in order to involve as many people as possible
- 3) promoting training and awareness for head teachers
- 4) providing visibility and recognition for high-quality projects and encouraging teachers who show a propensity towards constant improvement
- 5) attempting to obtain official forms of recognition for the work carried out by eTwinning teachers, at least on a professional level.

In addition to all of the above, of course, there are the factors that depend, above all, on the individual and which are often the most difficult for teachers themselves to acknowledge and face in a positive way. These include: degree of broadmindedness; the willingness to learn from others and experiment; the desire to share all the project phases, responsibilities and acknowledgements with one's colleagues; the ability to keep going in the face of possible initial failure, while learning from the experience; the will to keep up to date with the latest teaching approaches; the propensity towards collaboration with other teachers, active participation and helping one's own students become aware of their responsibilities; and the ability to document and disseminate the activated processes and achieved results.

All these elements concern the subjective sphere of each individual and can only be induced, not imposed. Undoubtedly, they require further reflection and study.

eTwinning Seminars 2007-2008

SEMINAR FEEDBACK QUESTIONNAIRE

In order to improve our services, please express your opinion on the seminars indicating your evaluation on each line by crossing the corresponding box.

(tabulation: far from satisfactory= 0 ; unsatisfactory=1; satisfactory=2; highly satisfactory=3)

Seminar Title: eTwinning's contribution to innovation

	Far from satisfactory	Unsatisfactory	Satisfactory	Highly Satisfactory
Seminar content				
Effectiveness of subject exposition method	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work group methodology (Effectiveness of subgroup working methods)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of participant involvement				
Direct participant support (Relationship with participants, congenial disposition, administration,...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Logistics (Times, classrooms, hotel arrangements, refreshments,...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Express an overall opinion				
General Seminar Organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes and suggestions (methodology, content, teaching etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Evaluation of the 2007–2008 Inter-regional National Seminars (Pistoia, Desenzano, Lecce)

by *Donatella Nucci*

eTwinning National Support Service (ANSAS, formerly Indire)

The assessment of the annual inter-regional seminars, as expressed through the feedback questionnaires handed out to the participants, was basically positive. The majority of responses to the questions put to them ranged from ‘satisfactory’ to ‘highly satisfactory’, and only a small number of teachers were totally dissatisfied.

The most appreciated aspect of the seminars was the possibility to meet colleagues and to share their experiences of eTwinning and have a chance to discuss common problems.

The feedback from the teachers indicated that they appreciated the practical workshops and the direct involvement. Many suggested increasing the time devoted to such activities in the seminars even further.

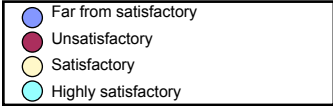
Although the comments relating to the papers given by the experts were, on the whole, positive, they were enjoyed less. Some found them a little too “lecturely” and long, others would have preferred the written papers to have come before the seminar, so as to be prepared and to be better able to follow the presentations. Other teachers would have liked the possibility to interact more with the experts.

The seminars were designed for teachers with experience of eTwinning. Nonetheless, many of them indicated in their responses that they would have appreciated a more detailed look at the tools made available on the eTwinning portal; others wrote that they would have liked practical computer exercises. Another positive aspect of the seminars that emerges from the feedback is that they offered an opportunity to reflect on the work they had done.

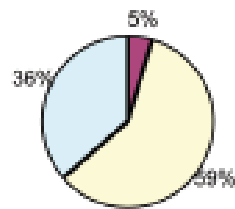
The overall logistics of the seminars in the centre and north of Italy was deemed satisfactory, while some participants at the Lecce seminar complained that the seminar facilities were hard to reach.

The graphs below indicate in detail the results of the feedback.

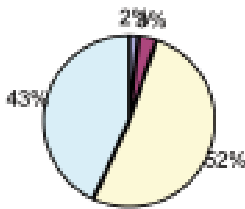
Pistoia Seminar



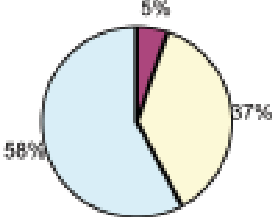
Seminar content



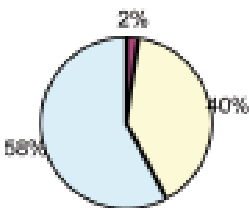
Work group methodology



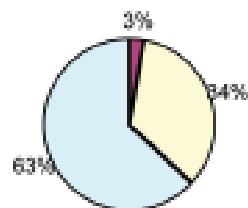
Level of participant involvement



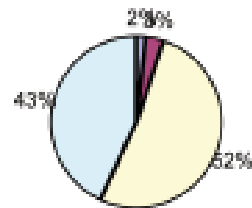
Direct participant support



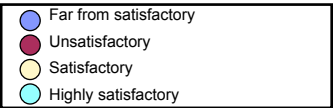
Logistics



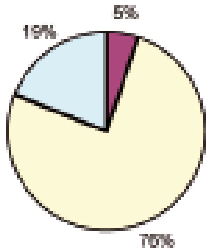
General seminar organization



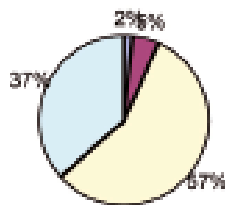
Desenzano Seminar



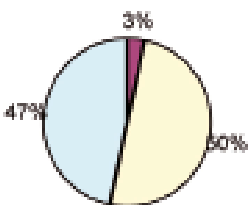
Work group methodology



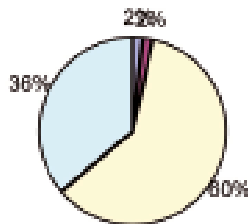
Seminar content



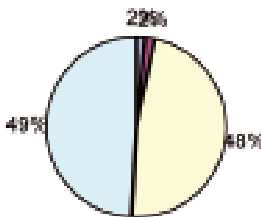
Logistics



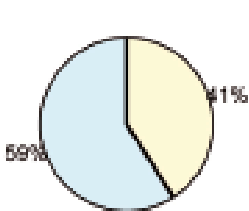
General seminar organization



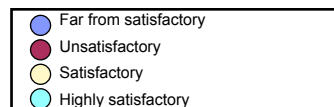
Level of participant involvement



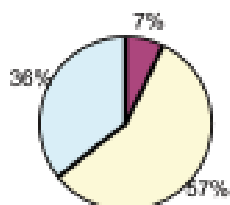
Direct participant support



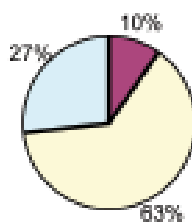
Lecce Seminar, 22-23 November 2007



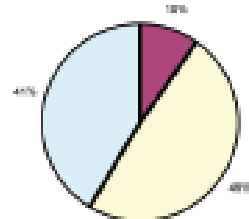
Seminar content



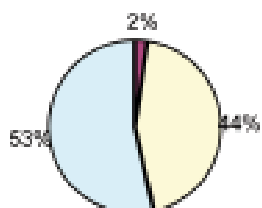
Work group methodology



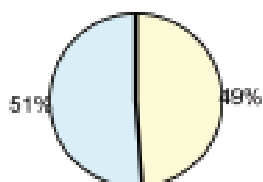
Level of participant involvement



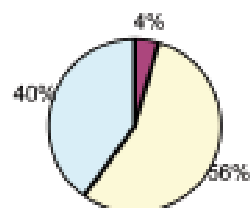
Direct participant support



Logistics



General seminar organization



eTwinning Seminar
Central Italy and the Islands
Pistoia, 25-26 October 2007
Villa Cappugi, via Collegiatiato 45

Programme

Day One

8:30 – 9:00	<i>Registration of participants</i>
9:00 – 9:30	Welcoming remarks, Clementina Muritano, Ministry of Education – International Affairs Office
9:30 – 10:00	The purpose and objectives of the seminar, NSS Italy
10:00 – 10:30	<i>Last Report on the Lisbon Strategy</i> , Fiora Imberciadori, LLP Agency Italy
10:30 – 11:00	<i>Coffee break</i>
11:00 – 13:00	Introduction by three experts to the contribution of technology to the teaching of subjects Emanuele Manfredini, expert in the 'Mathematics, Science and Technology' area Anselmo Grotti, expert in the 'Social and Civic Competences' area Laura Parigi, expert in the 'Cultural Awareness and Expression' area
13:30 – 15:00	<i>Lunch</i>
15:00 – 17:00	First session of parallel workshops focusing on the three themes
17:00 – 17:30	<i>Coffee break</i>
20:00	<i>Dinner</i>

Day Two

09:00 – 10:00	Second session of workshops
10:00 – 10:30	<i>Coffee break</i>
10:30 – 12:00	Third session of workshops
12:00 – 13:00	Presentation in plenary session of the results of the workshops
13:30	<i>Lunch</i>

eTwinning Seminar
Northern Italy and the Mountains
Desenzano del Garda, 6-7 November 2007
 Best Western Hotel Oliveto

Programme

Day One

- 8:30 – 9:00 *Registration of participants*
- 9:00 – 9:30 Welcoming remarks, Clementina Muritano, Ministry of Education – International Affairs Office
- 9:30 – 10:00 The purpose and objectives of the seminar, NSS Italy
- 10:00 – 10:30 *Knowledge, abilities and skills: spin-offs of the Lisbon Strategy in the Italian scholastic and training system*
 Inspector Angelo Antonio Parvini, MPI
- 10:30 – 11:00 *Coffee break*
- 11:00 – 13:00 Introduction by three experts to the contribution of technology to the teaching of subjects
 Mario Ambel, expert in the ‘Cultural Awareness and Expression’ area
 Marco Guastavigna, expert in the ‘Social and Civic Competences’ area
 Marilena Beltramini, expert in the ‘Social and Civic Competences’ area
- 13:30 – 15:00 *Lunch*
- 15:00 – 15:40 Paper by Franco Di Cataldo, expert in ‘Mathematics, Science and Technology’
- 15:40 – 17:00 First session of parallel workshops focusing on the three themes
- 17:00 – 17:30 *Coffee break*
- 17:30 – 19:00 Second session of parallel workshops (part one)
- 20:00 Dinner in a typical local restaurant

Day Two

- 08:45 – 9:00 *Registration*
- 09:00 – 10:00 Second session of workshops (part two)
- 10:00 – 10:30 *Coffee break*
- 10:30 – 12:00 Third session of workshops
- 12:00 – 13:00 Presentation in plenary session of the results of the workshops
- 13:30 *Lunch*

ETwinning Seminar
Southern Italy and the Seas
Lecce, 22-23 November 2007
Hotel President

Programme

Day One

- 8:30 – 9:00 *Registration of participants*
- 9:00 – 9:30 Welcoming remarks and introduction to the content of the seminar, Clementina Muritano, MPI – International Affairs Office
- 9:30 – 12:20 The contribution of technology to innovation in the teaching of subjects
 Emanuele Manfredini and Franco Di Cataldo, experts in the ‘Mathematics, Science and Technology’ area
 Marilena Beltramini, expert in the ‘Social and Civic Competences’ area
 Linda Guarino, expert in the ‘Cultural Awareness and Expression’ area
- 12:20 – 13:30 *Knowledge, abilities and skills: spin-offs of the Lisbon Strategy in the Italian scholastic and training system*
 Inspector Angelo Antonio Panvini, MPI – Director General, Post-Secondary Education
- 13:30 – 15:00 *Lunch*
- 15:00 – 17:00 First session of parallel workshops focusing on the three themes
- 17:00 – 17:30 *Coffee break*
- 17:30 – 18:30 Second session of workshops

Day Two

- 08:45 – 9:00 *Registration*
- 09:00 – 10:30 Third session of workshops
- 10:30 – 11:00 *Coffee break*
- 11:00 – 12:00 Preparation of reports for the plenary session
- 12:00 – 13:00 Presentation in plenary session of the results of the workshops
- 13:30 *Lunch*

RECOMMENDATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 18 December 2006

on key competences for lifelong learning

(2006/962/EC)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 149(4), and Article 150(4) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee (1),

Having regard to the opinion of the Committee of the Regions (2),

Acting in accordance with the procedure laid down in Article 251 of the Treaty (3),

Whereas

(1) The Lisbon European Council (23-24 March 2000) concluded that a European framework should define the new basic skills to be provided through lifelong learning as a key measure in Europe's response to globalisation and the shift to knowledge-based economies, and emphasised that people are Europe's main asset. Since then, those conclusions have been regularly restated including by the Brussels European Councils (20-21 March 2003 and 22-23 March 2005), and in the re-launched Lisbon Strategy which was approved in 2005.

(2) The European Councils of Stockholm (23-24 March 2001) and Barcelona (15-16 March 2002) endorsed the concrete future objectives of European education and training systems and a work-programme (the Education and Training 2010 work programme) to achieve them by 2010. These objectives include developing skills for the knowledge society and specific objectives for promoting language learning, developing entrepreneurship and the overall need to enhance the European dimension in education.

(3) The Commission Communication "Making a European Area of Lifelong Learning a Reality" and the subsequent Council Resolution of 27 June 2002 on lifelong learning (4) identified the provision of the new basic skills as a priority, and stressed that lifelong learning must cover learning from pre-school age to post-retirement age.

(4) In the context of improving the Community's employment performance, the European Councils of Brussels (March

2003 and December 2003) stressed the need to develop lifelong learning, with a particular focus on active and preventive measures for the unemployed and inactive persons. This built on the report of the Employment Taskforce, which emphasised the need for people to be able to adapt to change, the importance of integrating people into the labour market, and the key role of lifelong learning.

(5) In May 2003 the Council adopted the European reference levels (benchmarks), demonstrating a commitment to a measurable improvement in European average performance. These reference levels include reading literacy, early school leaving, completion of upper secondary education and participation of adults in lifelong learning, and are closely linked to the development of key competences.

(6) The report of the Council on the broader role of education adopted in November 2004 stressed that education contributes to preserving and renewing the common cultural background in society and to learning essential social and civic values such as citizenship, equality, tolerance and respect, and is particularly important at a time when all Member States are challenged by the question of how to deal with increasing social and cultural diversity. Moreover, enabling people to enter and stay in working life is an important part of the role of education in the strengthening of social cohesion.

(7) The report adopted by the Commission in 2005 on progress towards the Lisbon objectives in education and training showed that there had been no progress in reducing the percentage of low achievers in reading literacy at age 15 or in raising the completion rate for upper-secondary education. Some progress was visible in reducing early school leaving, but at current rates the 2010 European reference levels adopted by the May 2003 Council will not be achieved. Participation of adults in learning is not growing fast enough to reach the 2010 reference level, and data shows that low-skilled people are less likely to participate in further training.

(8) The Framework of Actions for the Lifelong Development of Competences and Qualifications, adopted by the European social partners in March 2002, stresses the need for businesses to adapt their structures more and more quickly in order to remain competitive. Increased team-work, flattening of hierarchies, devolved responsibilities and a

(1) OJ C 193, 18.2.2006, p. 109.

(2) OJ C 229, 22.9.2006, p. 21.

(3) Opinion of the European Parliament of 26 September 2006 (not yet published in the Official Journal) and Council Decision of 18 December 2006.

(4) OJ C 163, 9.7.2002, p. 1.

greater need for multi-tasking are leading to the development of learning organisations. In this context, the ability of organisations to identify competences, to mobilise and recognise them and to encourage their development for all employees represent the basis for new competitive strategies.

- (9) The Maastricht Study on Vocational Education and Training of 2004 indicates a significant gap between the levels of education required by new jobs, and the levels of education achieved by the European workforce. This study shows that more than one third of the European workforce (80 million persons) is low-skilled whilst it has been estimated that by 2010 almost 50 % of new jobs will require tertiary level qualifications, just under 40 % will require upper secondary schooling, and only about 15 % will be suitable for those with basic schooling.
- (10) The Joint Council/Commission Report on the Education and Training 2010 work programme, adopted in 2004, reinforced the need to ensure that all citizens are equipped with the competences they need as part of Member States' lifelong learning strategies. To encourage and facilitate reform, the report suggests the development of common European references and principles and gives priority to the Key Competences Framework.
- (11) The European Youth Pact which is annexed to the conclusions of the Brussels European Council (22-23 March 2005) stressed the need to encourage the development of a common set of core skills.
- (12) The need to equip young people with necessary key competences and to improve educational attainment levels is an integral part of the Integrated Guidelines for Growth and Jobs 2005-2008, approved by the June 2005 European Council. In particular, the Employment Guidelines call for education and training systems to be adapted in response to new competence requirements through better identification of occupational needs and key competences as part of Member States' reform programmes. Furthermore, the Employment Guidelines call for ensuring gender mainstreaming and gender equality in all actions and for achieving an average employment rate for the European Union of 70 % overall and of at least 60 % for women.
- (13) This Recommendation should contribute to the development of quality, future-oriented education and training tailored to the needs of European society, by supporting and supplementing Member States' actions in ensuring that their initial education and training systems offer all young people the means to develop key competences to a level that equips them for adult life, and which forms a basis for further learning and working life and that adults are able to develop and update their key competences through the provision of coherent and comprehensive lifelong learning. This Recommendation should also provide a common European reference framework on key competences for policy makers, education and training providers, the social

partners and learners themselves in order to facilitate national reforms and exchange of information between the Member States and the Commission within the Education and Training 2010 work programme, with the aim of achieving the agreed European reference levels. Furthermore, this Recommendation should support other related policies such as employment and social policies and other policies affecting youth.

- (14) Since the objectives of this Recommendation, namely to support and supplement Member States' action by establishing a common reference point that encourages and facilitates national reforms and further cooperation between Member States, cannot be sufficiently achieved by the Member States acting alone and can therefore be better achieved at Community level, the Community may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Recommendation does not go beyond what is necessary in order to achieve those objectives insofar as it leaves the implementation of this Recommendation to Member States.

THEY RECOMMEND:

That Member States develop the provision of key competences for all as part of their lifelong learning strategies, including their strategies for achieving universal literacy, and use the 'Key Competences for Lifelong Learning — A European Reference Framework' (hereinafter referred to as 'the Reference Framework') in the Annex hereto as a reference tool, with a view to ensuring that:

1. initial education and training offers all young people the means to develop the key competences to a level that equips them for adult life, and which forms a basis for further learning and working life;
2. appropriate provision is made for those young people who, due to educational disadvantages caused by personal, social, cultural or economic circumstances, need particular support to fulfil their educational potential;
3. adults are able to develop and update their key competences throughout their lives, and that there is a particular focus on target groups identified as priorities in the national, regional and/or local contexts, such as individuals needing to update their skills;
4. appropriate infrastructure for continuing education and training of adults including teachers and trainers, validation and evaluation procedures, measures aimed at ensuring equal access to both lifelong learning and the labour market, and support for learners that recognises the differing needs and competences of adults, is in place;
5. coherence of adult education and training provision for individual citizens is achieved through close links with employment policy and social policy, cultural policy,

innovation policy and other policies affecting young people and through collaboration with social partners and other stakeholders;

HEREBY TAKE NOTE OF THE COMMISSION'S INTENTION TO:

1. contribute to Member States' efforts to develop their education and training systems and to implement and disseminate this Recommendation, including by using the Reference Framework as a reference to facilitate peer learning and the exchange of good practices and to follow up developments and report on progress through the biennial progress reports on the Education and Training 2010 work programme;
2. use the Reference Framework as a reference in the implementation of the Community Education and Training programmes and to ensure that these programmes promote the acquisition of key competences;

3. promote the wider use of the Reference Framework in related Community policies, and particularly in the implementation of employment, youth, and cultural and social policy, and to develop further links with social partners and other organisations working in those fields;
4. review the impact of the Reference Framework within the context of the Education and Training 2010 work programme and report, by 18 December 2010, to the European Parliament and to the Council on the experience gained and the implications for the future.

Done at Brussels, 18 December 2006.

For the European Parliament
The President
J. BORRILL FONTELLES

For the Council
The President
J.-R. ERNSTSTAM

ANNEX

KEY COMPETENCES FOR LIFELONG LEARNING — A EUROPEAN REFERENCE FRAMEWORK

Background and aims

As globalisation continues to confront the European Union with new challenges, each citizen will need a wide range of key competences to adapt flexibly to a rapidly changing and highly interconnected world.

Education in its dual role, both social and economic, has a key role to play in ensuring that Europe's citizens acquire the key competences needed to enable them to adapt flexibly to such changes.

In particular, building on diverse individual competences, the differing needs of learners should be met by ensuring equality and success for those groups who, due to educational disadvantages caused by personal, social, cultural or economic circumstances, need particular support to fulfil their educational potential. Examples of such groups include people with low basic skills, in particular with low literacy, early school leavers, the long-term unemployed and those returning to work after a period of extended leave, older people, migrants, and people with disabilities.

In this context, the main aims of the Reference Framework are to:

- 1) identify and define the key competences necessary for personal fulfilment, active citizenship, social cohesion and employability in a knowledge society;
- 2) support Member States' work in ensuring that by the end of initial education and training young people have developed the key competences to a level that equips them for adult life and which forms a basis for further learning and working life, and that adults are able to develop and update their key competences throughout their lives;
- 3) provide a European level reference tool for policy makers, education providers, employers, and learners themselves to facilitate national and European level efforts towards commonly agreed objectives;
- 4) provide a framework for further action at Community level both within the Education and Training 2010 work programme and within the Community Education and Training Programme.

Key Competences

Competences are defined here as a combination of knowledge, skills and attitudes appropriate to the context. Key competences are those which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment.

The Reference Framework sets out eight key competences:

- 1) Communication in the mother tongue;
- 2) Communication in foreign languages;
- 3) Mathematical competence and basic competences in science and technology;
- 4) Digital competence;
- 5) Learning to learn;
- 6) Social and civic competences;
- 7) Sense of initiative and entrepreneurship; and
- 8) Cultural awareness and expression.

The key competences are all considered equally important, because each of them can contribute to a successful life in a knowledge society. Many of the competences overlap and interlock: aspects essential to one domain will support

competence in another. Competence in the fundamental basic skills of language, literacy, numeracy and in information and communication technologies (ICT) is an essential foundation for learning, and learning to learn supports all learning activities. There are a number of themes that are applied throughout the Reference Framework: critical thinking, creativity, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings play a role in all eight key competences.

1. Communication in the mother tongue (1)

Definition:

Communication in the mother tongue is the ability to express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing), and to interact linguistically in an appropriate and creative way in a full range of social and cultural contexts in education and training, work, home and leisure.

Essential knowledge, skills and attitudes related to this competence:

Communicative competence results from the acquisition of the mother tongue, which is intrinsically linked to the development of an individual's cognitive ability to interpret the world and relate to others. Communication in the mother tongue requires an individual to have knowledge of vocabulary, functional grammar and the functions of language. It includes an awareness of the main types of verbal interaction, a range of literary and non-literary texts, the main features of different styles and registers of language, and the variability of language and communication in different contexts.

Individuals should have the skills to communicate both orally and in writing in a variety of communicative situations and to monitor and adapt their own communication to the requirements of the situation. This competence also includes the abilities to distinguish and use different types of texts, to search for, collect and process information, to use aids, and to formulate and express each oral and written arguments in a convincing way appropriate to the context.

A positive attitude towards communication in the mother tongue involves a disposition to critical and constructive dialogue, an appreciation of aesthetic qualities and a willingness to strive for them, and an interest in interaction with others. This implies an awareness of the impact of language on others and a need to understand and use language in a positive and socially responsible manner.

2. Communication in foreign languages (1)

Definition:

Communication in foreign languages broadly shares the main skill dimensions of communication in the mother tongue. It is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of social and cultural contexts (in education and training, work, home and leisure) according to one's wants or needs. Communication in foreign languages also calls for skills such as mediation and intercultural understanding. An individual's level of proficiency will vary between the four dimensions (listening, speaking, reading and writing) and between the different languages, and according to that individual's social and cultural background, environment, needs and/or interests.

Essential knowledge, skills and attitudes related to this competence:

Competence in foreign languages requires knowledge of vocabulary and functional grammar and an awareness of the main types of verbal interaction and registers of language. Knowledge of social conventions, and the cultural aspect and variability of languages is important.

(1) In the context of Europe's multilingual and multilingual societies, it is recognised that the mother tongue may not in all cases be an official language of the Member State, and that ability to communicate in an official language is a pre-condition for ensuring full participation of the individual in society. In some Member States the mother tongue may be one of several official languages. Measures to address such cases, and apply the definition accordingly, are a matter for individual Member States in accordance with their specific needs and the circumstances.

(2) It is important to recognise that many Europeans live in bilingual or multilingual families and communities, and that the official language of the country in which they live may not be their mother tongue. For these groups, this competence may refer to an official language, rather than to a foreign language. Their social, motivational, and socio-economic reasons for developing this competence in support of their integration will differ, for instance, from those learning a foreign language for travel or work. Measures to address such cases, and apply the definition accordingly, are a matter for individual Member States in accordance with their specific needs and circumstances.

Essential skills for communication in foreign languages consist of the ability to understand spoken messages, to initiate, sustain and conclude conversations and to read, understand and produce texts appropriate to the individual's needs. Individuals should also be able to use skills appropriately, and learn languages also informally as part of lifelong learning.

A positive attitude involves the appreciation of cultural diversity, and an interest and curiosity in languages and international communication.

3. Mathematical competence and basic competences in science and technology

Definition:

- A. Mathematical competence is the ability to develop and apply mathematical thinking in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought (logical and spatial thinking) and presentation (formulas, models, constructs, graphs, charts).
- B. Competence in science refers to the ability and willingness to use the body of knowledge and methodology employed to explain the natural world, in order to identify questions and to draw evidence-based conclusions. Competence in technology is viewed as the application of that knowledge and methodology in response to perceived human wants or needs. Competence in science and technology involves an understanding of the changes caused by human activity and responsibility as an individual citizen.

Essential knowledge, skills and attitudes related to this competence:

- A. Necessary knowledge in mathematics includes a sound knowledge of numbers, measures and structures, basic operations and basic mathematical presentations, an understanding of mathematical terms and concepts, and an awareness of the questions to which mathematics can offer answers.

An individual should have the skills to apply basic mathematical principles and processes in everyday contexts at home and work, and to follow and assess chains of argument. An individual should be able to reason mathematically, understand mathematical proof and communicate in mathematical language, and to use appropriate aids.

A positive attitude in mathematics is based on the respect of truth and willingness to look for reasons and to assess their validity.

- B. For science and technology, essential knowledge comprises the basic principles of the natural world, fundamental scientific concepts, principles and methods, technology and technological products and processes, as well as an understanding of the impact of science and technology on the natural world. These competences should enable individuals to better understand the advances, limitations and risks of scientific theories, applications and technology in societies at large (in relation to decision-making, values, moral questions, culture, etc).

Skills include the ability to use and handle technological tools and machines as well as scientific data to achieve a goal or to reach an evidence-based decision or conclusion. Individuals should also be able to recognise the essential features of scientific inquiry and have the ability to communicate the conclusions and reasoning that led to them.

Competence includes an attitude of critical appreciation and curiosity, an interest in ethical issues and respect for both safety and sustainability, in particular as regards scientific and technological progress in relation to oneself, family, community and global issues.

4. Digital competence

Definition:

Digital competence involves the confident and critical use of Information Society Technology (IST) for work, learning and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.

Essential knowledge, skills and attitudes related to this competence:

Digital competence requires a sound understanding and knowledge of the nature, role and opportunities of ICT in everyday contexts in personal and social life as well as at work. This includes basic computer applications such as word processing, spreadsheets, databases, information storage and management, and an understanding of the opportunities and potential risks of the Internet and communication via electronic media (e-mail, network tools) for work, leisure, information sharing and collaborative networking, learning and research. Individuals should also understand how ICT can support creativity and innovation, and be aware of issues around the validity and reliability of information available and of the legal and ethical principles involved in the interactive use of ICT.

Skills needed include the ability to search, collect and process information and use it in a critical and systematic way, assessing relevance and distinguishing the real from the virtual while recognising the links. Individuals should have skills to use tools to produce, present and understand complex information and the ability to access, search and use Internet-based services. Individuals should also be able use ICT to support critical thinking, creativity, and innovation.

Use of ICT requires a critical and reflective attitude towards available information and a responsible use of the interactive media. An interest in engaging in communities and networks for cultural, social and/or professional purposes also supports this competence.

3. Learning to learn

Definition:

'Learning to learn' is the ability to pursue and persist in learning, to organise one's own learning, including through effective management of time and information, both individually and in groups. This competence includes awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence involves gaining, processing and utilising new knowledge and skills as well as seeking and making use of guidance. Learning to learn engages learners to build on prior learning and life experiences in order to use and apply knowledge and skills in a variety of contexts at home, at work, in education and training. Motivation and confidence are crucial to an individual's competence.

Essential knowledge, skills and attitudes related to this competence

Where learning is directed towards particular work or career goals, an individual should have knowledge of the competences, knowledge, skills and qualifications required. In all cases, learning to learn requires an individual to know and understand his/her preferred learning strategies, the strengths and weaknesses of his/her skills and qualifications, and to be able to search for the education and training opportunities and guidance and/or support available.

Learning to learn skills require firstly the acquisition of the fundamental basic skills such as literacy, numeracy and ICT skills that are necessary for further learning. Building on these skills, an individual should be able to access, gain, process and utilise new knowledge and skills. This requires effective management of one's learning, career and work patterns, and, in particular, the ability to persevere with learning, to concentrate for extended periods and to reflect critically on the purposes and aims of learning. Individuals should be able to dedicate time to learning autonomously and with self-discipline, but also to work collaboratively as part of the learning process, draw the benefits from a heterogeneous group, and to share what they have learnt. Individuals should be able to organise their own learning, evaluate their own work, and to seek advice, information and support when appropriate.

A positive attitude includes the motivation and confidence to pursue and succeed at learning throughout one's life. A problem-solving attitude supports both the learning process itself and an individual's ability to handle obstacles and change. The desire to apply prior learning and life experiences and the openness to look for opportunities to learn and apply learning in a variety of life contexts are essential elements of a positive attitude.

6. Social and civic competences

Definition:

These include personal, interpersonal and intercultural competence and cover all forms of behaviour that equip individuals to participate in an effective and constructive way in social and working life, and particularly in increasingly diverse societies, and to resolve conflict where necessary. Civic competence equips individuals to fully participate in civic life, based on knowledge of social and political concepts and structures and a commitment to active and democratic participation.

Essential knowledge, skills and attitudes related to this competence

- A. Social competence is linked to personal and social well-being which requires an understanding of how individuals can ensure optimum physical and mental health, including as a resource for oneself and one's family and one's immediate social environment, and knowledge of how a healthy lifestyle can contribute to this. For successful interpersonal and social participation it is essential to understand the codes of conduct and manners generally accepted in different societies and environments (e.g. at work). It is equally important to be aware of basic concepts relating to individuals, groups, work organisations, gender equality and non-discrimination, society and culture. Understanding the multi-cultural and socio-economic dimensions of European societies and how national cultural identity interacts with the European identity is essential.

The core skills of this competence include the ability to communicate constructively in different environments, to show tolerance, express and understand different viewpoints, to negotiate with the ability to create confidence, and to feel empathy. Individuals should be capable of coping with stress and frustration and expressing them in a constructive way and should also distinguish between the personal and professional spheres.

The competence is based on an attitude of collaboration, assertiveness and integrity. Individuals should have an interest in socio-economic developments and intercultural communication and should value diversity and respect others, and be prepared both to overcome prejudices and to compromise.

- B. Civic competence is based on knowledge of the concepts of democracy, justice, equality, citizenship, and civil rights, including how they are expressed in the Charter of Fundamental Rights of the European Union and international declarations and how they are applied by various institutions at the local, regional, national, European and international levels. It includes knowledge of contemporary events, as well as the main events and trends in national, European and world history. In addition, an awareness of the aims, values and policies of social and political movements should be developed. Knowledge of European integration and of the EU's structures, main objectives and values is also essential, as well as an awareness of diversity and cultural identities in Europe.

Skills for civic competence relate to the ability to engage effectively with others in the public domain, and to display solidarity and interest in solving problems affecting the local and wider community. This involves critical and creative reflection and constructive participation in community or neighbourhood activities as well as decision-making at all levels, from local to national and European level, in particular through voting.

Full respect for human rights including equality as a basis for democracy, appreciation and understanding of differences between value systems of different religious or ethnic groups lay the foundations for a positive attitude. This means displaying both a sense of belonging to one's locality, country, the EU and Europe in general and to the world, and a willingness to participate in democratic decision-making at all levels. It also includes demonstrating a sense of responsibility, as well as showing understanding of and respect for the shared values that are necessary to ensure community cohesion, such as respect for democratic principles. Constructive participation also involves civic activities, support for social diversity and cohesion and sustainable development, and a readiness to respect the values and privacy of others.

7. Sense of initiative and entrepreneurship

Definition:

Sense of initiative and entrepreneurship refers to an individual's ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance.

Essential knowledge, skills and attitudes related to this competence

Necessary knowledge includes the ability to identify available opportunities for personal, professional and/or business activities, including 'bigger picture' issues that provide the context in which people live and work, such as a broad understanding of the workings of the economy, and the opportunities and challenges facing an employer or organisation. Individuals should also be aware of the ethical position of enterprises, and how they can be a force for good, for example through fair trade or through social enterprise.

Skills relate to proactive project management (including, for example the ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record), effective representation and negotiation, and the ability to work both as an individual and collaboratively in teams. The ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential.

An entrepreneurial attitude is characterised by initiative, pro-activity, independence and innovation in personal and social life, as much as at work. It also includes motivation and determination to meet objectives, whether personal goals, or those held in common with others, including at work.

2. Cultural awareness and expression

Definition:

Appreciation of the importance of the creative expression of ideas, experiences and emotions in a range of media, including music, performing arts, literature, and the visual arts.

Essential knowledge, skills and attitudes related to this competence

Cultural knowledge includes an awareness of local, national and European cultural heritage and their place in the world. It covers a basic knowledge of major cultural works, including popular contemporary culture. It is essential to understand the cultural and linguistic diversity in Europe and other regions of the world, the need to preserve it and the importance of aesthetic factors in daily life.

Skills relate to both appreciation and expression: the appreciation and enjoyment of works of art and performances as well as self-expression through a variety of media using one's innate capacities. Skills include also the ability to relate one's own creative and expressive points of view to the opinions of others and to identify and realise social and economic opportunities in cultural activity. Cultural expression is essential to the development of creative skills, which can be transferred to a variety of professional contexts.

A solid understanding of one's own culture and a sense of identity can be the basis for an open attitude towards and respect for diversity of cultural expression. A positive attitude also covers creativity, and the willingness to cultivate aesthetic capacity through artistic self-expression and participation in cultural life.