



# Guide of Good Practice

WebTV - Guide of Good Practice



*Supported by the  
European Commission*





WebTV Project

# **Guide of Good Practice**

Web TV project is carried out within the framework of the SOCRATES / MINERVA programme and is co-financed by the European Commission

Contract Number: 100656 - CP -1-2002-1- GR - MINERVA - MPP



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Printed by EPINOIA S.A.

ISBN No. 960-8339-47-2



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## Introduction

The Web TV for Schools project is an example of an up-to-date learning environment that encourages students to become active learners and to realize the value of informal learning as an integral part of education. The project involves students in **extended authentic episodes of playful learning**. Students are selecting an aspect of their country's culture to promote, collect the content, write the scenario, shoot the film, do the montage, finalize the emission by adding subtitles in English and upload the emission to the platform especially created for the project. The learning environment is acting as stimuli for intercultural dialogue between the schools participating in the project, as the starting point for discussion and exchange of ideas about culture, Europe, national and European identity. The activities of the project offer new learning experiences to students by connecting society with school through real life situations, making students learn in an informal but effective way within the framework of the schools' curricula.

The aim of this guide is not to describe in detail the 2 years' work undertaken in the framework of the "WebTV for schools" project. Its main goal is to be an easy to use guide for the teachers that would like to implement similar educational activities either by following WebTV's pedagogical and technological pathway or by adapting it to their specific educational environment.

This guide is one of the major outcomes of the project. It analytically describes the developed pedagogical and technological approach. It includes the conclusions from the evaluation of the project's run and a detail description of the final products and their use in for the classroom activities as an example of good practice. Its compilation was the result of

the collaborative effort of teachers (they know best what their colleagues need to know in order to be able to successfully implement similar activities in their classroom), experts in the field of pedagogy and educational technology.

The guide is divided into **seven chapters**. The **first one** is a general introduction containing information on the project and its objectives. The **second one** is a presentation of the pedagogical framework of the project setting the general pedagogical framework. **Chapter 3** is a technical description of the WebTV platform, starting with a general description of the system and going into a more detailed description of the users' interfaces, the subtitling mechanism and finally the uploading mechanism to be used by the students when they have finished their production and they wish to upload it on the web platform of the project. **Chapter 4** is a short movie guide with instructions to the non-expert on how to write a scenario, how to prepare a production, how to shoot a movie and how to edit and add subtitles. **Chapter 5** refers to the implementation of the project in 2 cycles of school-centered work: test and final run. In **Chapter 6** the evaluation methodology and outcomes are analytically described. In **Chapter 7** the final pedagogical and technological conclusions are presented. In the Appendices the evaluation instruments (**Appendix A**) and the student's video productions (in the attached CD-ROM, **Appendix B**) are presented.

# Chapter 1

## *Implementing Innovations in the School Curriculum*

### **1.1 Towards eEurope 2005**

Powerful new technologies promise to transform education and training in ways previously unimaginable. Rapid advancements in educational technologies in the years ahead could enable new learning environments using simulations, visualizations, immersive environments, game playing, intelligent tutors and avatars, reusable building blocks of content, address distributed communities of learners, and many more. There are many challenges in the process of educational innovation that must be addressed in order to take advantage of these technologies to improve learning. Advanced technologies developed to meet other purposes must be translated into affordable tools for learners to use. Technical standards must be deployed to help guide the development of educational content that will be drawn from countless sources throughout the world. The technology community has to form stronger partnerships with the educational community. The educational institutions need to prepare for rapid technological change.

With the shift towards the knowledge society, the change of working conditions and the high-speed evolution of information and communication technologies, people's knowledge and skills need continuous updating. Learning, based on collaborative working, creativity, multidisciplinary, adaptiveness, intercultural communication and problem solving, has taken on an important role in everyday life. The learning process is becoming pervasive, both for individuals and

organisations, in formal education, in the professional context and as part of leisure activities. Learning should be accessible to every citizen, independent of age, education, social status and tailored to his/her individual needs.

Member States responded positively to these challenges through the development of the ambitious eEurope 2005: An Information Society for All Action Plan. Most schools are now connected and work is underway to provide convenient access to the Internet and multimedia resources for teachers and students. The eEurope 2005 Action Plan aims that all schools and universities have Internet access for educational and research purposes over a broadband connection. Museums, libraries, archives and similar institutions that play key role in eLearning will be connected to broadband networks.

The principal objectives targeted by this effort are

- to improve the learning process, particularly the intertwined learning process between individuals and organisations, with consideration of pedagogic principles and the learning context,
- to increase the efficiency of learning for individuals and groups.

These objectives are expected to be realised mainly by

- supporting adaptive learning and collaborative learning,
- extending access to new learning opportunities, independently of time and place,
- facilitating transfer and sharing of knowledge.

The WebTV project could act as an excellent example of the effective and advantageous use of broadband services as it requires high speed transmission of significant amounts of data. In this way it is expected to support both the national initiatives as well as one of the main aims of the eEurope 2005 Action Plan, namely the widespread availability and use of broadband networks throughout the Union by 2005.

Additionally, as reflected in the eEurope 2005 Action plan “Developing a better understanding of the role of science in society and bringing science and scientific subjects closer to the citizen is expected to help increasing young people’s interest in science and scientific careers”. The WebTV project is building on this aim as it offers to young people the opportunity to use scientific instruments such as robotic telescopes in the framework of their normal school curriculum. Moreover, the WebTV project contributes to the access to and sharing of advanced tools, services and learning resources not only between schools but also among science museums and research centers. Finally, it supports the

provision of key skills to the future citizens and scientists (collaborative work, creativity, adaptability, intercultural communication).

The main outcome of the WebTV project is an ICT-based environment along with educational material to support science instruction at secondary school level. In the following paragraphs the main parameters that were taken into account during the development and the implementation process are presented.

## 1.2 Designing ICT-based educational applications

Taking a closer look on the courses internationally given, we observe that in practical teaching situations the methodology used in computer-assisted instruction is moving more and more into ICT-assisted knowledge construction, distributed expertise and collaborative learning. Hyper- and multimedia-based sources of knowledge have replaced in many cases traditional study books with electronic resources. ICT and networking can make the learning environment more open in terms of knowledge acquisition in all phases of education.

When teaching and learning is supported by virtual tools, it should be kept in mind that there is already a pedagogical concept incorporated within this environment determining the scale of pedagogical functions made available for the courses. Speaking in the context of the Internet, first it is the technology itself that determines the range of possibilities (e.g. dominance of texts due to bandwidth restrictions). Then, it is the environment which is based on the functionality of the technology that contains a certain design with a set of tools, functions, bars, fixed hierarchies and positions. Some kind of pedagogical limitations is again provided at the final stage of the pedagogical design of courses. Therefore, the variety of pedagogical functions is restricted to the tools which are offered by the pre-defined and standardised environment.

Wilson (Wilson, 1996) has described the relationship between the ideas of knowledge and the nature of the learning environment. His main ideas are presented in Table 1.1.

**Table 1.1:** Relationship between the ideas of knowledge and the nature of the learning environment (Wilson, 1996)

| Metaphor about knowledge, knowing                                                       | Consequence for the learning Environment                                                                |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Knowledge is a quantity or packet of content waiting to be transmitted                  | Products that can be distributed via different methods, media.                                          |
| Knowledge is a cognitive state as reflected in a person's schema and procedural skills. | Combination of teaching strategies, goals and means to change the schemes of thought in the individual. |
| Knowledge is a person's meanings constructed in interaction with one's Environment.     | The pupil acting and working in an environment with plenty of resources and stimuli.                    |
| Knowledge is enculturation or adoption of a group's ways of seeing and acting.          | Participation in the everyday life and activities of the community.                                     |

By analysing the concepts of environments and courses where information is provided on the Internet, all the aforementioned types of learning environment can be found. ICT is therefore not prone to support one particular type of learning environments. On the contrary, designing the ICT-based educational innovations, the technology will have to be introduced in such a way so as to create and support the desired learning environment. However, in practice we notice that the integration of virtual learning tools can also be derived from a pragmatical decision at the educational institution level. This can also be used as a step for introducing the evolutionary transition from traditional teaching environments towards settings related to ideas of social constructivism. The evolution of learning environment is a complicated process where the critical factor is often the institutions' cultural and historical situation with practical arrangements and not the learning theory (Bourdieu and Passeron, 1977).

As a consequence of this shift towards a student-centred approach, the building of “learning communities” and “collaboration” plays a crucial role in the instructional design of (social constructivist) learning environments.

Learning is an active process. Dewey (Dewey, 1916) foreshadowed the idea of active learning when he claimed that an individual learns through doing and engaging in authentic tasks. Learning as an active process has also been elaborated on by Bruner (Bruner, 1966; Bruner, 1986; Bruner, 1990). A central point to this idea is the concept that learning is a process where students explore and discover connections in order to create new ideas and notions. Learning takes place when the learner interacts with the content, materials, and other learners in the learning environment.

Exploring the experience of teaching in an online ICT-based environment, one needs to include a discussion about the interactive nature of learning as well as about the cooperative responsibilities that are implied by the use (and nature) of technology. The interplay between the learner and the instructional content is also a critical component of student's learning. A recapitulation and discussion follows in addition to an outline of how this interplay defines the evolving responsibility of the teachers in this environment.

Working with ICT in the classroom raises many barriers. The environment needs to be able to support the learner in ways that are encouraging by providing familiarity and security. The learner also needs to be productive in the environment and, therefore, needs to have tools at her/his disposal that will help her/him accomplish their tasks. Not only is organising group work a pedagogical measure that supports good learning but it is also a necessity. This stems from the fact that group work is the cornerstone of establishing the student-teacher relationship and defines the interaction among participants.

In their study about the evaluation of learning environments Britain and Liber (Britain and Liber, 1999) present two crucial issues regarding the work with Virtual Learning Environments (VLE)

- VLEs should provide opportunities to improve the quality and variety of teaching and learning that have not been achieved using current methods.

- VLEs should reduce the administrative burden on teachers, thus allowing them to manage their work load more efficiently and to be able to pay more attention to the educational needs of each student individually.

Taking into account these requirements, it is evident that the approach for analysing the process must reflect various other aspects apart from the discussion of pedagogical techniques within VLEs.

During the stage of planning, development and while educational activities are running, it is necessary to be stated that there are also a lot of other important aspects to be considered in this discussion about pedagogical techniques. In addition, teaching supported by ICT means a lot of organisational aspects that one has to consider. This statement is reinforced dynamically within intercultural settings and even more when the benefits of technologies are even applied in the context of local, regional, national or international collaboration.

When choosing to use educational software and material available on the web, the need to establish certain criteria for evaluation emerges. Several lists with criteria for evaluation have been developed. There is no checklist that seems to be exhaustive but the following criteria are frequently quoted:

### **Usability**

Usability of multimedia material and web resources (Oliver et al., 1996) differs a lot from usability of conventional materials. Conventional materials require few operational skills on the part of the learner, while a web material, for instance, employ many different functions and features whose effectiveness or ineffectiveness is subject to evaluation. Usability can be measured in terms of access and retrieval speed, navigation, search facility, communication facility, user friendliness. Educational software web resources should be examined in order to

- 1) see the extent to which they can be easily and/or reliably accessed or if they are frequently overloaded or offline and
- 2) identify technical constraints, if any, which may limit usability.

In addition, the effectiveness of several facilities that influence usability should be considered. Such facilities include (a) the navigation tools, like menus, buttons, history lists, site maps and/or table of contents that should be both sufficient and easy to use, (b) the search tools, either in the form of a search engine or search categories, which help or hinder the user from effectively retrieving information in whatever form and (c) the communication tools that enable the user to get help, to communicate with peers and to interact with the web resource itself through games and tests. All these elements are said to enhance the resource's usability and increase its pedagogical value-added and user- friendliness.

### **Pedagogical Effectiveness**

In addition to usability, pedagogical effectiveness in terms of pedagogical approach, interactivity, interdisciplinarity, learning outcomes should be examined. General pedagogical criteria are related to the objectives and the target audience. According to Smith (Smith, 1997), it is important that a resource states the subject area and the level of users it is addressed to, and takes into account the intended users' background, knowledge, goals and motivation for using the particular resource. In this way the resource (Edelson and Gordin, 1996), which is available to the user, becomes also accessible.

Apart from the general pedagogical criteria, the evaluation should focus on exploring the role of the learner and the role of the teacher within the resource separately. As for the role of the learner, students using the resource are expected to create knowledge databases, i.e., act as creators, constructors, carry out tasks and activities, i.e., act as doers, and undertake research and field studies, i.e., act as explorers/researchers. The quality of the instructional setting of the resource should therefore be assessed. According to Oliver et al. (Oliver et al., 1996), the role of the learner within an instructional setting greatly influences or enhances learning outcomes. If a resource acts like another information source and interacts to a limited extent with the user, then it contributes little to the user's learning.

In addition, the extent to which the resource includes or reinforces collaborative activities, which are said to be of great educational value for the students involved, should be measured. As Oliver et al (Oliver et al., 1996) point out, interactions and activities that enable group and teamwork should be included in the teaching-learning process. They are its essential ingredients. The communications' component of the web provides unique opportunities to enable forms of communicative and collaborative activities among networked learners. The value of group work cannot be stressed enough. Group work (Riel, 1998) provides a context for the externalization of thinking. It permits for the discussion of multiple perspectives and helps all participants realise that each person creates one of many perspectives on a topic or problem. Learning to see from the perspective of others helps create a more complex understanding of situations. More effective learning environments ensure that the resources are used within a social context with students working in groups, discussing the issues, reporting back, presenting findings, interviewing and debating the issues to ensure that students have the opportunity to articulate, negotiate and defend their knowledge. Knowledge construction is rarely done in isolation.

Measures and assessments of achievement and outcomes from instructional settings also play an important part in the teaching and learning process. It is suggested (Oliver et al., 1996) that assessment should not be a separate stage in a linear process of pre-test, instruction, post-test; rather assessment should be integrated, ongoing and seamless part of the learning environment. The enhanced interactive capabilities of the web provide the means for assessment of student learning to extend beyond conventional essays and examinations. More reliable assessments now take the form of evaluation measures such as portfolios, summary statistics of learners' paths through instructional material, diagnosis, and reflection and self-assessment.

Regarding the role of the teacher, it should be examined in order to see if the resource provides teachers with tools to develop own material, e.g. lesson plans, classroom activities, tests, etc., and if they can make good use of the existing material offered by the resource.

In addition to that, opportunities for communication with colleagues should be evaluated. It should be noted that a programme or a web-resource, which enables and supports communication greatly facilitates the development of a learning community (Riel, 1998). This learning community is a community of practice, a group of people who share common interest in a topic or area, a particular way of talking about their phenomena, tools and sense-making approaches for building their collaborative knowledge with a sense of common collective tasks. Communications technology provides promising opportunities for collaborative learning environments for teachers in which they can reflect on practice with colleagues, share expertise in a distributed knowledge framework, and build a common understanding of new instructional approaches, standards and curriculum. Communication with students is also important. The teacher should be able to provide coaching, feedback scaffolding, fading, modelling and so on, which are powerful enhancements to any learning situation.

Furthermore, interactivity is very important. Interactivity (Oliver et al., 1996) involves the forms of communication that a medium supports enabling dialogue between the learner and the instructor -not one-way transmission mode- and it is an important attribute of technology-supported environments. Print-based instructional materials have served well in the past in support of student-centred independent learning. In recent times, the move to computer-based learning environments has been taken to improve the perceived interactivity of the materials.

However, it should be noted that clicking on paths and navigating through a web instructional sequence is not representative of interactivity. Some strategies that have been used to create the essence of interactivity in web learning materials include the provision of model answers and e-mail communications. Other forms of interactivity include the creation of forms within documents by which learners can enter responses and receive programmed feedback.

The integration of web resources (Riel, 1998) should provide new forms of interaction very different from reading a text or watching a video or talking to a group. It should be an evolving social construction. It is this blend of projected reality with communication that makes it possible to create a sense of shared place with the potential for different forms of social exchanges.

Finally, interdisciplinarity influences a resource's pedagogical effectiveness. In other words, it should be examined the extent to which a resource provides information in different subject areas, integrates it efficiently by making meaningful links, includes activities which draw on knowledge and skills from various subject areas, and gives support for the development of interdisciplinary projects.

**Content efficiency**

The evaluation of content efficiency includes measuring information, structure, presentation and accuracy. For a start, information quality is an important criterion. More specifically, the breadth and depth of information, questions such as whether information is linked with other relevant online resources, if it is detailed and extensive, if it enriches the school curriculum and if various points of view are presented are relevant. Information should also be evaluated in relation to the educational objectives it serves and in terms of its appropriateness for the specified target audience.

In addition, the reliability of information has to be examined. Information (Smith, 1997) can be factual, original, opinion or simply links; it can have the form of a print document or it may be published on the web; whichever the case is, there should be evidence of authenticity and reliability, a reference of the authority responsible. Clues that provide such evidence are the credentials of the author or source of information. In addition, meta-information, i.e., information about information, can facilitate the reliability check. Harris (Harris, 1997) comments that there are two basic forms of meta-information, a) summary and b) evaluative meta-information. The first includes all the shortened forms of information, such as abstracts, content summaries or even tables of contents. The latter includes all the types that provide some judgment or analysis of content, i.e., recommendations, ratings, reviews and commentaries. These two types can be combined, providing us with a quick overview and some evaluation of the information reliability.

It is also important to know when the information was created and the date of the last update of the information included in a web-resource in order to check if it is still of value. Some work may be timeless; other work, however, has limited useful life because of advances in the discipline (psychological theory for example), or it is outdated very quickly (like technology news).

Apart from the quality of information, evaluation should focus on the structure of the resource. Assuming that a resource contains rich material and links with other on-line resources (Edelson and Gordin, 1996), these have to be properly organized in order to help the user locate the information it is of his/her interest. Organization (Oliver et al., 1996) of material in web resources can be linear, i.e., links simply act to connect nodes in a specified sequence and the learner follows an instructional sequence planned by the instructor. There is also the potential to create materials with varying degrees of linearity. Links may have a hierarchical structure, giving learners more freedom in the choice of path through the materials. The choice of information organization for materials in the web depends on the nature of the intended learning outcomes. For example, if the aim is to develop students' initial knowledge, namely facts, procedures and rules of discourse, linear linking is an appropriate hypermedia form. For higher levels of knowledge, developing an understanding of concepts and principles, the less structured hierarchical and referential linking is more appropriate. In such cases students are guided by such factors as their prior knowledge and readiness to assimilate new material. When building on an existing knowledge base, learners can benefit from the freedom to browse and explore, to inquire and seek responses to their own questions rather than following a pre-determined path of instruction.

Another critical aspect that determines content efficiency is the quality of presentation/design of the resource. The legibility of the texts and the technical and aesthetic quality of graphics, images, sound, video, and virtual reality elements are indicators of good presentation; according to (Oliver et al., 1996), these also increase the “readability” of the material presented and facilitate understanding.

Finally, content efficiency can be measured in terms of accuracy. The goal of the accuracy test (Harris, 1997; Smith, 1997) is to assure that the information included in a resource is actually correct: up to date, factual, detailed, exact and comprehensive and it is free of political, ideological biases.

### **1.3 Creation of learning communities**

#### **1.3.1 Rationale**

Advocates of the use of ICTs in the classroom claim that universal access to the Internet mainly will

- expand the resources for teaching and learning in schools and classrooms,
- provide more challenging, authentic and higher-order learning experiences for students.

Technology can support learning in five ways (Bransford, Brown, and Cocking, 1999)

- bring into the classroom activities that are based on real-world problems and that involves students in finding their own problems, testing ideas, receiving feedback, and working collaboratively with other students or practitioners beyond the school classroom, provide tools and scaffolds that enhance learning, support thinking and problem solving, model activities and guide practice, represent data in different ways, and are part of a coherent and systemic educational approach,
- give students and teachers more opportunities, including those where students evaluate the quality of their own thinking and products, for feedback, reflection, and revision,
- give students and teachers the opportunity to interact with working scientists, receive feedback from multiple sources including their peers and experienced cognitive tutors, and coach in areas where improvement is needed,
- build local and global communities where teachers, administrators, parents, students, practicing scientists, and other interested community people are included in order to expand the learning environment beyond the school walls, and

- expand opportunities for teachers' education which includes helping teachers to think differently about learners and learning, reduces the barriers between students and teachers as learners, creates new partnerships among students and parents, and expands communities of learners that support ongoing communication and professional development of teachers.

One of the most quoted reasons why ICT should be integrated into teaching is that it contributes to enhance the quality of teaching and learning. One aspiration is the more effective achievement of existing educational goals. Another aspiration is that ICT should act to liberate learners. The central issue (Somekh and Davis, 1997) is to empower pupil's autonomy over the pace and content of his/her own learning. Choosing to use ICTs in the classroom demands changes in the way the instruction is organised. Teachers' attitudinal changes concerning classroom practice play a fundamental role in realising the potential of ICTs in education. The shift from the old paradigm to the new (information-age) paradigm is best illustrated in Table 1.2 (Riel and Fulton, 1998).

**Table 1.2:** *The shift from the old paradigm to the new (information-age) paradigm (Riel and Fulton, 1998).*

| <b>Isolated class structure</b> | <b>Learning community</b>          |
|---------------------------------|------------------------------------|
| Homogeneous Grouping            | Heterogeneous Grouping             |
| Class Discipline                | Community Organisation             |
| Competition                     | Collaboration                      |
| Knowledge Delivery              | Knowledge Instruction              |
| Teacher Centred                 | Student Centred                    |
| Independent, individual work    | Interdependent, teamwork           |
| Expertise flows from 1-to-many  | Expertise flows in many directions |

The paradigm shift is from a teaching environment to a learning environment, where appropriate combinations of challenge and guidance, empowerment and support, self-direction and structure exist.

### 1.3.2 Collaborative learning

The use and application of ICT to the learning process allows the realisation of collaborative learning. Technology is used as a tool for learning, group work, communication and collaboration. The new technologies have made the so-called horizontal communication flow possible. Learners are able to exchange information and experiences in real or not real time as well as to carry out common project work for both learning and operational purposes. More specifically, collaborative learning is the process of getting two or more students to work together to learn. Learners collaborate

with each other and participate in heterogeneous groups which include a mixture of cultures, abilities, socio-economic status and age, a wealth of knowledge and perspectives.

Learners with different perspectives are brought together to produce shared understandings. Truly collaborative environments encourage all students to ask questions; define problems; take charge of the conversation when appropriate; participate in setting goals, standards, benchmarks, and assessments; communicate with experts outside the community. Each learner has a specific role and task but all learners collaborate to accomplish a joint goal or project. Learning occurs as the result of interaction with others. Considering the issues previously described, the objectives of the collaborative learning scenario may be stated as follows

- to learn collaboratively and autonomously according to group's own interests, needs, pace, etc,
- to share information and experiences,
- to reinforce the processes of knowledge construction by means of interaction with peers and thus its metacognitive, cognitive and social components,
- to update the course content and knowledge,
- to increase and diversify the feedback given to trainees (thanks to vertical and horizontal communication),
- to access diversified information and different opinions,
- to allow greater interaction between trainers and trainees,
- to encourage confident and continuing personal and professional use of ICT .

Choosing which learning methodology to employ depends on the learning objectives, the specific characteristics, the learners' needs, and on other factors related to technology and time. However, it should be noted that the aforementioned learning methodologies complement one the other and can be integrated. In this way any limitations of one method can be overcome by the other.

#### **1.4 The significance of interdisciplinary activities**

Recent calls for educational reform focus on the need for curricula emphasizing conceptual learning that is integrated across traditional subject areas. Interdisciplinary instruction links various content areas and is organized around questions, themes, problems, or projects rather than along traditional subject-matter boundaries. Such instruction is said to be responsive to children's curiosity and questions about real life and to result in productive learning and positive attitudes toward school and teachers. Classroom strategies for learning become more student-centred, with learning

of content increasingly embedded in real-world contexts, separation between academic curriculum areas becomes less defined. Problem-oriented learning that is connected to real-world problems draws from many disciplines to find solutions. When a powerful idea or relevant problem is presented in a learning context, students are motivated to collaborate, explore the idea, and find solutions. In their quest, it becomes apparent that

- Communication skills are necessary.
- Historical perspective may provide clues to the exploration or solutions.
- Mathematical principles and skills can help in measuring, graphing, calculating, and analyzing the problem.
- Technology tools can assist in researching the problem, collecting and organizing information, and presenting results.

Learning through such interdisciplinary and student-directed learning activities was proved effective and long lasting. New learning environments must provide students with experiences in which they draw upon knowledge from several disciplines, apply a variety of strategies to get at the intended learning, and choose from a rich array of learning tools to examine, publish, illustrate, and communicate their results. Perhaps our greatest challenge in applying interdisciplinary learning exists at the secondary grade levels. Many high schools have yet to adjust their schedules, strategies, or educational philosophies to accommodate the need to connect learning to real-world contexts and problems.

Information technology cuts across all disciplines. It is a powerful aid to addressing real-world multidisciplinary problems. The ability to access and store digitized information allows the student to research, collect, and share on a level hitherto unparalleled. Collaboration and consultation with other students and experts is fast becoming an everyday experience. Increasingly powerful computers provide students with real-world problem-solving tools. They help students overcome handicaps, choose among learning strategies, perceive and create new relationships among subjects, and demonstrate their knowledge in words, pictures, moving images, and sound. The experience of these changes allows us to preconceive the high school learning environment where disciplines cross-pollinate and students' learning is truly integrated.

### **1.5 A new role for the teachers**

When talking about the use of ICT in the classroom, one should consider the specific conditions that can act as constraints in the diffusion and successful implementation of such an innovation. These conditions are related to the existing curriculum, managerial issues, range of resources available, level of competency and attitude of the teacher.

In fact, the teacher is a key player in the implementation of the innovation. At the centre of effective use of instructional technology is the teacher. For students to become comfortable and effective users of various technologies, teachers must be able to make wise, informed decisions about technology. All teachers should be confident in applying technology when and where appropriate.

As quoted in (McCombs, 2000), Fullan stresses that the more powerful technology becomes the more indispensable good teachers are. From Fullan's point of view, teachers who are pedagogical design experts and facilitators of learning are needed. Technology may change some of the traditional teacher roles but it will also require them to engage more powerful roles - roles that include not only using technology appropriately that opens new pathways to learning not previously available but also require teachers to find ways to build on meaning, purpose, connections and relationships to the larger world and community outside the school building.

The role of the teacher in the new technology-rich instructional paradigm involves the following

- becoming the creator of an effective external learning environment that stimulates the environment within the classroom,
- mentoring and counselling to ensure that learners are encouraged to pursue their learning in an appropriate and meaningful direction using approaches best suited to them as individuals,
- facilitating students' inquiry, guiding student work and offering individual help (Suthers et al., 1997),
- coaching, observing students, offering hints and reminders, providing feedback, scaffolding and fading, modelling (Oliver et al., 1996).

However, there are a number of teacher-related factors that should be carefully considered so that appropriate support and professional development opportunities are provided. These teacher-related factors that can act as barriers include the following

- Established patterns and limited exposure to new models. According to Collis (Collis, 1996), teachers may have developed patterns and styles of teaching and students interaction that fit their own circumstances and can be managed. Previous practice provides them security. Many prefer replicating traditional chalk and talk instruction and "safe", teacher-led and controlled learning activities. Changing what they think as appropriate pedagogy for the learners, themselves and their subject area may be difficult. This can be even harder when teachers act in isolation from one another and are not exposed to innovative models of learning.

- Accessing technology for lesson preparation but also for instructional purposes plays a significant role. The availability and operability of technologies influences the extent to which they are used.
- Teachers' workload and lack of flexibility in time and in the curriculum are also considerable constraints.
- The school's culture.

Drawing from various interpretations, Stoll and Fink (Stoll and Fink, 1996) define school culture as follows; various formal and informal elements, the beliefs that colleagues share, the dominant values and the school vision as well as the organisational rules and policies that regulate the life of the school. We should not forget that the teacher is part of a whole, is a member of an organisation with which he/she interacts. If a teacher works in isolation from peers, without collegial support and in a stagnant environment, he/she is likely to be influenced by it and remain static. On the other hand, an organisational culture that is characterised by teacher collegiality and formal or informal collaborative work, both supports and facilitates the development of the organisation's members. Teachers working in an environment where they feel safe, give and receive support from their peers and/or from the head, exchange ideas and innovative practices and share the same values, are likely to respond positively to an innovation and embrace it.

What teachers need in order to respond to their new role are skills in ICT which can be classified into a range of competences. These competences act as a useful framework for teacher professional development and should be perceived as integrated elements of a teacher's professional role and activities.

The National Council of Educational Technology's guide lists seven elements

- positive attitudes to ICT,
- understanding of the educational potential of ICT,
- ability to use ICT effectively in the curriculum,
- ability to manage ICT use in the classroom,
- ability to evaluate ICT use,
- ability to ensure differentiation and progression,
- technical capability to use an appropriate range of ICT resources and to update these skills.

In order to develop these skills and overcome the barriers mentioned above, teachers need

- sufficient professional development opportunities in order to (1) learn how technology works and how it is integrated into the curriculum, (2) develop new skills, and (3) change attitudes, and
- support both on pedagogical and on technological issues in order to sustain the use of new technologies in the instruction and to help teachers respond to the demands of their new multifaceted role.

However, changing roles and adopting a new model of instruction which involves the use of ICT is a lengthy process. Teachers go through certain phases before they fully adopt and commit themselves to using ICTs for instructional purposes.

Riel and Fulton (Riel and Fulton, 1998) adopt the stages that describe teacher's change in relation to technology intensive environments or projects, i.e., the entry level, the adoption level, the adaptation level and the appropriation level, identified by ACOT (Apple Classrooms of Tomorrow research project) researchers.

- Entry level: much frustration and anxiety, with a focus on replicating traditional instruction and learning activities.
- Adoption level: beginning to move from concern with connecting the computers to using them, but with much of the attention on how they can support established instructional formats and teacher presented lectures and presentations.
- Adaptation level: greater focus on ways student involvement may change, and teaching style may differ (e.g. giving students more responsibility, encouraging students to use and create activity modules similar to those the teachers are creating).
- Appropriation level: new instructional patterns start to emerge building around interdisciplinary project based approaches, more reflection on teaching and recognizing the need for alternate models of assessment and classroom structuring.

Only when teachers adopt innovation and commit themselves to using technology for instructional purposes, can we ensure that students will be prepared for the challenges they will face in the future. Simply providing sufficient access to technology for teaching and learning is not enough. The preparation of new teachers should be improved, including their knowledge of how to use technology for effective teaching and learning; the quantity, quality and coherence of technology-focused activities aimed at the professional development of teachers should be increased; and the instructional support available to teachers who use technology should be improved.

## 1.6 The WebTV Project: Implementing innovations in the School curriculum

### 1.6.1 Rationale and background of the project

In our days the world has become very competitive, technology-directed, market-oriented. Today's school often fails in following the pace of the evolutions, innovations, demands of the society. It offers considerable amounts of information, not always interesting for the students, not always up-to-date, focusing more on the transmission of knowledge to students than in the development of students' skills and to their active contribution and participation in the learning procedure. However, it has been proved that in this way students learn less, are bored and usually forget very quickly what they have learned, as the knowledge acquired in school has almost no application in everyday life. The gap between school and society disappoints students who spend the most productive years of their lives in an environment that does not receive and integrate the messages of society and consequently does not prepare them properly for their life as adults. The lack of flexibility of the current school curriculum does not allow for the full exploitation of the full potentials of informal ways of learning inside and outside school; therefore most students think that learning stops when school stops as well. Moreover, it is common knowledge that the media nowadays have not taken up the responsibility to produce good science or education programmes; the emissions addressing an audience of youngsters with the aim to help them learn are very limited in number and do not always combine the contributions of both technologists and pedagogues; moreover, there are no emissions on the media made by students themselves for other students; what is created for them does not necessarily interest them as their opinion has not been asked in advance. Finally, the current means of inter-school communication (school newspapers, emails, even Bulletin Boards) between students lack in interactivity, innovation and are extremely deficient compared to the stimuli nowadays youngsters receive from the Media and their everyday extracurricular activities.

Since school nowadays does not include many motivating activities for students, is usually far from the evolutions of society and often accused of being anachronistic and outdated, it is absolutely necessary for actors implicated in education to create the appropriate learning environment that would encourage students to become active learners and realize the value of informal learning as an integral part of education. This can only be achieved through the formation of multidisciplinary learning environments, which would propose to the participating students a well-structured series of activities with a common aim. These activities should be student centered and integrated in the everyday school curriculum.

As research in pedagogy demonstrates successful learning can be achieved in **authentic situations**. Furthermore, very much related to constructivist learning theories, the learner should be encouraged to actively explore "the world" by himself instead of being taught through teacher-oriented approaches which are often based on the idea of "knowledge transmission". By developing the Web TV educational platform, the **Web-TV for schools platform**, over which students

collaborate in order to present emissions created by themselves to their virtual classmates, the **Web TV for schools project** brings together actors experts in technology and the audiovisual sector with experts in pedagogy and students. The partnership considered it as a great challenge to exploit the individual talents and expertise of its members in order to create a pilot Web TV platform for students with an educational aim, hoping that the impact of the proposed approach will be much bigger in the future as it might launch a new educational culture coming to classrooms but also households through Internet.

### 1.6.2 Aims and objectives

The main objectives of the project are the following:

- **Provision of a model for motivating activities integrated in the school curriculum.** The Web TV for schools involves students in extended authentic episodes of playful learning. The main task for the students in the framework of the project is the preparation of emissions for the Web TV for schools channel. Students select an aspect of their country's culture to promote; then they collect the audiovisual content, create the scenario, shoot the film, do the montage and finalize the emission by adding subtitles in English and upload the emission to the platform especially created for the project. The students' activities offer new learning experiences connecting society with school through real life situations, making students learn in an informal but effective way in the framework of their school curriculum.
- **Development of an interdisciplinary application model in the current educational practice.** Students' activities are implemented in various subjects (History, Foreign Languages, Geography, Technology, Informatics class) of their curriculum. It is well known that the interdisciplinary approach is more effective as to the quality of the learning result since it provides a more global view of the subject to be taught examining the learning object from various aspects.
- **Provision of a model for collaborative learning and teamwork.** It is common knowledge among educators that students' participation enhances the learning result and is therefore one of the major demands of the teaching practice nowadays. In the framework of the project students collaborate between them inside the same group closely in every stage (selection of the scenarios, collection of the content, development of the material, preparation of the emissions, evaluation and discussion on other students' emissions) of the implementation; the students' groups also collaborate with their virtual classmates (through short field researches in the participating schools asking them what they would prefer to watch, realizing videoconferences and live online discussions with the use of "plateau" technology; finally, students also have the unique chance to collaborate with teams of field experts (Academics in Computer Science, Pedagogy and Cognitive Science and professionals in the field of Audiovisuals).

- **Familiarization of students with the culture of other European countries and their cultural background.** Students attend through the platform the emissions prepared by their virtual classmates and have the opportunity to comment and influence their further development. The aim of the partnership was to make the emissions act as stimuli for an intercultural dialogue between the participating students, and help towards the direction of the understanding of the “others”, their culture, and their customs. In this way a forum of discussion between students is being created and an exchange of views takes place. Students in Finland learning about the ways of production of the famous French wines, students in Denmark watching traditional folklore Greek dances performed by their Greek classmates, students in Germany learning about Greek historical monuments, are just some indicative examples of the kind of emissions students present to their classmates aiming to familiarize them with their own national culture, customs and traditions.
- **Promotion of language learning.** Students create scenarios both in their own and in foreign languages; they also comment upon their virtual classmates’ videos and write down subtitles in their own languages for the videos they view on the Web TV for schools platform. The Web TV for schools platform becomes in this way a language-learning tool offering students a new learning environment, with motivating, modern and challenging activities instead of the traditional exercises.
- **Familiarization of students and teachers with ICT and audiovisual productions.** ICT and the field of audiovisual productions are both very competitive and market-oriented subjects nowadays. Through the activities of the project students and teachers get to know the fascinating world of Multimedia and audiovisual productions in a pleasant way. Making students and teachers deal with them through the well-planned activities of the project can be considered as a unique opportunity of participating in a short trainee course about advanced applications in informatics. Before the project’s implementation effective training is offered to the teachers during the teachers workshop and through online seminars.
- **Research the educational potential** of the proposed ICT application in different educational and cultural settings. The project was implemented in two cycles of school centered work in a school network in six different countries (Greece, Austria, Germany, Finland, France, Denmark) that also allowed for an ethnographic research (see Chapter 7) and evaluation of different attitudes against the use of advanced technologies in different cultures providing thus ways for intercultural dialogue to improve these attitudes.
- **Effort to involve parents and local communities in general in the formation of the proposed learning environment.** The project aimed to listen to the parents’ ideas about their children’s school, about the society in which their children live and will live as adults and profit from their ideas, concern and experience. Subjects such as the difference between the generations, online live discussions with the use of the “plateau” technology between parents from different European countries as well as the live transmission of seminars for parents could help education profit from the input parents have to give as well as about the education of their children.

### 1.6.3 Innovation of the project

The project is innovative not only in its conception (informal learning in a formal environment) and following on of activities, but as far as the main outcome, the Web TV for schools platform is concerned. The integration of ways of informal learning in a formal educational environment such as the school is an innovation by itself. Moreover, in the framework of the project informal learning is promoted through the motivating activities students implement. In the case of Web TV for schools project the final product of the project, the Web TV for schools platform is the outcome of the collaboration effort of experts in technology, in the audiovisual productions, in pedagogy, teachers and students. The result of this collaboration effort is student-centered, as there is an equivalent and parallel development of pedagogical and technological components of the platform, seeing to students' needs and interests, as they were also able to participate in the design of the Web TV platform and direct its development. Finally, the Web TV for schools platform as an educational tool consists an innovation in the education technology field, since there are not many educational tools of this advanced technology used in current educational practice.

The project's specific approach is graphically represented in Figure 1.1

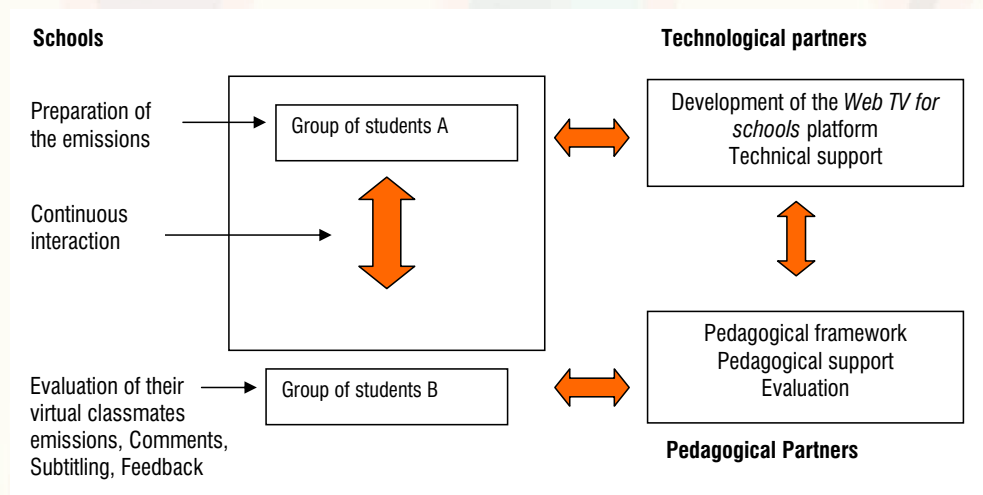


**Figure 1.1:** The student-centered approach that was adopted to the project. The Web TV for schools emissions were the outcome of the collaborative work of students, under the guidance of pedagogical and technological experts. The final outcomes, the Web TV for schools platform are the outcome of this continuous interaction between students, teachers, technologist and pedagogical experts.

### The WebTV Activities Framework



## Chapter 2

### ***Pedagogical Framework of the Web TV for Schools project***

#### ***2.1 WebTV project – General Pedagogical Framework***

The aim of the project was not to propose a rigid and pre-determined pedagogical approach but rather to suggest a skeletal framework that will be general enough to fit the pedagogical traditions of the various countries participating in the project and will respect cultural diversity.

A central challenge of the development of pedagogical approach of WebTV was to determine and support activities and processes that are critical for facilitating intentional and thoughtful learning. It was essential to work for achieving a shared understanding of the pedagogical value of Web-TV. It also appeared to be important to develop scenarios of collaborative movie building and define activities critical from this perspective.

The general pedagogical principles of the project are presented below.

##### ***2.1.1 Collaborative Design***

Collaboration can be encouraged by setting up design teams consisting of 4-5 students. Each team is expected to design Web-TV productions; the actual productions will be selected from among the preliminary designs. The participants

will be expected to create detailed designs of the movies to be produced before actual production stage, assess the design during the process, and evaluate success of the project in the end of the production. Optimally, each group will be given an opportunity to create at least short movies so that learning from the first to the second project will become possible.

### 2. 1. 2 Distributed Expertise

WebTV capitalizes on the cognitive diversity of the students. This is accomplished by creating heterogeneous teams (female & male, high & low achieving students). An important aspect of the project is to encourage the students to adopt an expert's role [a students specializing, for instance, in design of a) story line, b) lights, c) sound, and d) actual shooting of the video]. The method of reciprocal teaching could be used to help students to specialize in the selected expert domain (expert-students from several teams representing certain area could have their own meetings) and facilitate sharing of corresponding knowledge and understanding.

### 2. 1. 3 Peer interaction

The participating students were systematically guided to comment on each other's designs and ideas. They were encouraged to provide and receive feedback of each other's movies within and across WebTV schools. Peer interaction must be encouraged by creating tools for the WebTV site that allow the users to comment on each other's designs at various stages as well as comment of the final productions. The project proved an authentic context for interacting with people from different countries by using video links, email, chat, database discussion). It is essential to create a communication platform that helps participants to communicate about students' videos, building knowledge about them, and have the students' own ideas in the center.

### 2. 1. 4 Scaffolding expert-like movie production

An important challenge of WebTV project is to support students in expert-like production of movies. Toward this end, the participants that are experts in movie production need to construct simple guidelines that help students to structure their movie production according to core steps of production procedure. These kinds of structures or scaffold were build into the WebTV site in which students are posting their designs (i.e., certain steps that needs to be completed before a design is completed or students are allowed to start the actual production of the movie. Through this kind of cognitive scaffolding novices may be guided to function in a more expert-like way than would otherwise be possible. The students need help to set up production groups with appropriate pre-determined roles and pre-structured series of activities. By making the guidelines uniform across schools and countries, it will be possible to compare the actual production processes (and not only end results).



While the above presented points are related to the actual production of WebTV movies, the following points focus on the contents and topics of the movies. By selecting appropriate topics and working with the topics in a meaningful way, WebTV activities are used to facilitate meaningful learning.

### 2.1.5 Facilitating subject-matter learning (knowledge acquisition)

Encouraging the participants to produce movies concerning relevant subject-matter problems and topics and engage in corresponding discussion among them. The implementation parameter for WebTV document specified those subject-matter domains that are likely to be involved in WebTV programs produced by the students. Those involve language and literature (writing the scenario), English (subtitles), Arts, Sciences and social studies and so on. Resources of the whole curriculum may be used to produce WebTV programs.

### 2.1.6 Learning through inquiry

From the pedagogical perspective it is essential that the students do not only focus on transmission of information through producing and broadcasting the WebTV movies. It appears important to encourage them to engage in inquiry learning by selecting sufficiently multi-faceted and complex topics that provide opportunities for engaging in deepening inquiry **through pursuing students' own questions and articulating their own conceptions**. Optimally, working with WebTV productions guide the students to work for solving of complex and authentic problems. **Participation in this kind of process emphasizes cognitive reconstructing, by changing the cognitive division of labor between teacher and student. When a student takes responsibility for higher cognitive activities, it enables him or her to go to a deeper level of the learning process. This shift from teacher centeredness towards students' activity presupposes strong self-regulative efforts from students, and at the same time offers more space for individual activities. This kind of meaningful and close relationship towards the learning tasks also may help students increase their interest.**

### 2.1.7 Communication among the schools and the pedagogical team

Each participating school was encouraged to explicate its pedagogical approach in the beginning of the project as well as to engage in a continuous dialogue with the overall pedagogical framework of the project with the pedagogical team and the other schools. The WebTV pedagogical approach co-evolved or co-developed together with that of the participating schools. The co-evolution was supported by providing each school feedback of its pedagogical design of WebTV activities by the pedagogical team.

## *2.2 Pedagogical approach and evaluation scheme*

Pedagogical approach and evaluation approach are mutually dependent from each other. The evaluation scheme and the evaluation outcomes are described in detail in Chapter 7.

Having in mind the strong relationship among pedagogical and evaluation approach it is important to point out that in conjunction with formal assessment (including control groups), a case-based approach on evaluation was also followed in some extent. And that is because the limited number (6) of schools that participated in the WebTV project represented diverse cultural and social background. Consequently, it appeared plausible to take each school as a case with its specific characteristics. Each of them is its own unique context that cannot fully be compared with one another (see paragraph 6.2). Therefore, it was essential to collect systematically information of the setting of the project within each school and draw the profile of each school that are presented below (see paragraph 5.3 for a profile concerning pedagogical issues and also paragraph 6.4 for a profile concerning evaluation). This was valuable for the adaptation not only of the general pedagogical framework but also of the evaluation approach to the specific educational environment of each school.

## Chapter 3

### *Technical Description of the Web TV for Schools Project*

#### *3.1 WebTV for Schools platform*

The **WebTV for schools** project developed the appropriate framework for the introduction of ways of informal learning in the school curriculum. In the framework of the project a web site was developed, that acts as a stimuli for intercultural dialogue among schools that participated in the project.

The main aim of the platform is to become an advanced, interactive, easy to use learning environment, where all major steps of the project as well as the project's outcomes were presented. It is the nodal point over which students will present emissions created by themselves to their virtual classmates, communicate to each other, exchange ideas and opinions between them, but also communicate and exchange ideas and opinions with the public and experts.

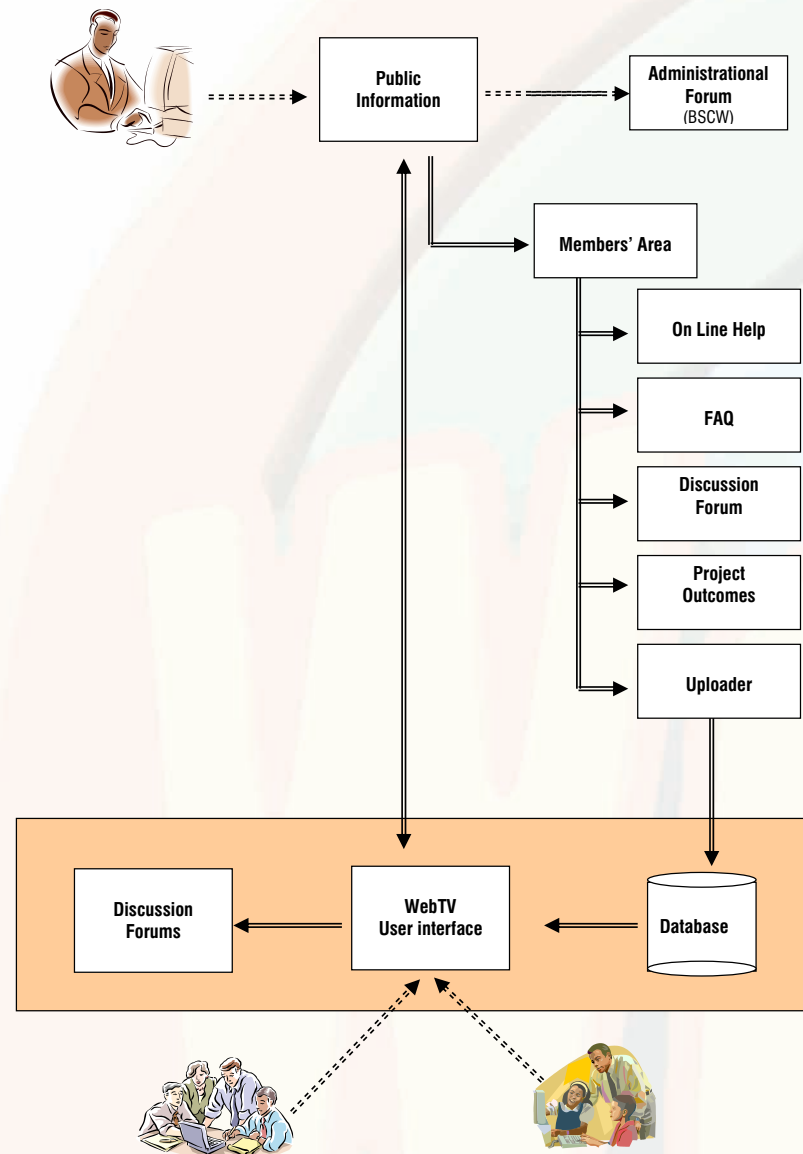


*Fig. 3.1 WebTV for Schools platform architecture*

There are five main user categories of the platform:

- Students: along with teachers they are the main target group of the project. They learn to develop video productions from scratch and make them available to public through Web.
- Teachers: they help and guide students during the development of their production.
- Pedagogues: they are responsible of the determination of users' needs and parameters, social and psychological, that are important for the design of the WebTV for Schools platform.
- Technicians: they developed all the mechanism for the WebTV for schools platform based on pedagogues' remarks.
- Public: they are the end users. They are able to watch students' productions over the web and learn about WebTV project and its aims.

The success of the WebTV web platform is to serve in the best way the needs of its users and provide them with all the facilitations that will advance and provide guidelines to their work.

For that reason, provides (see Fig 3.1):

- General information concerning the project such as title, description, aims and objectives, workshop, links to similar sites, bibliography, etc.
- A WebTV for Schools platform over which students collaborate in order to present their productions. It also gives the ability of communication and collaboration not only between partners, but also between partners and the public, while at the same time it supplies specialized information about the students' emissions and their profiles and the outcomes of the project. The platform consists of six components:
  - The Uploading Interface that provides an easy and friendly way to the students in order to upload and store their emissions and the project's outcomes, such as scenario, approach, questionnaire etc, in a database.
  - The Database in which all the gathered information during the uploading procedure is stored.
  - The Data Retrieval Tool that retrieves from the Database the requested information that a partner, or a student or the public might request.
  - The WebTV User Interface in which the requested information that concerns the students' emissions, is presented.
  - The Authorization System, which supervises access to the web site.
  - The Members' Area where partners can find projects' outcomes, on-line help, manuals and general information concerning projects' steps.

A diagrammatical representation of the overall WebTV platform and its organization is as follows (Fig. 3.2):

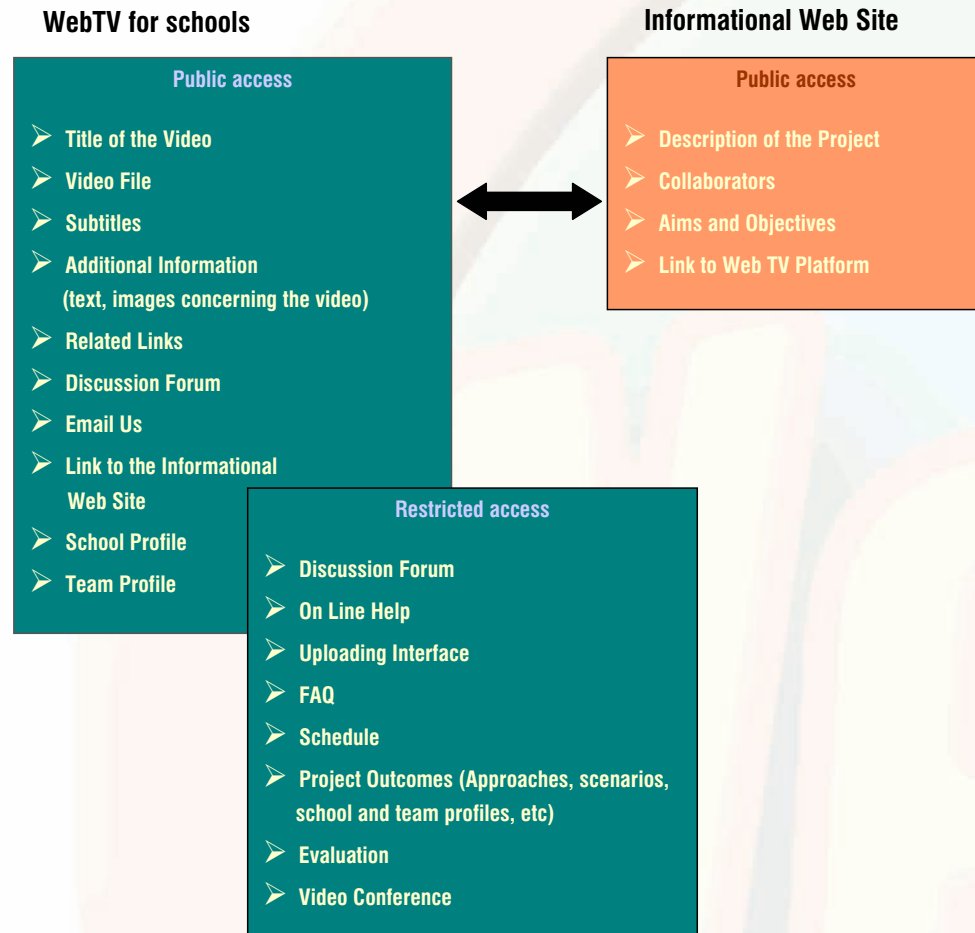


*Fig. 3.2 WebTV for Schools platform organization*



### 3.2 WebTV for Schools Platform Architecture

The WebTV for schools platform was implemented in php programming language. The first page of the platform is built in flash technology, so that it is more spectacular and friendly to the users.

As shown on the scheme above, it is combined of two areas:

- The public access area contains information about students' emissions and constitutes the medium of communication among partners, students and the public.
- The restricted access area contains information about the projects' outcomes, offers help to partners and is the medium of communication among them. Of course, only partners have access to this area, which is controlled through the Authorization System.

#### 3.2.1 WebTV User Interface

The WebTV User Interface is the public access part of the WebTV for schools platform. It is where the information about students' emissions is presented. Specifically, provides information to partners and the public about:

1. School Profile
2. Team Profile
3. Links related to the displayed production
4. Discussion Forum among public, partners and authors (students and teachers). Subjects that can be discussed are related to the emissions
5. Title of the production
6. Video and subtitles files or flash file
7. Additional Information

On the WebTV User Interface window there are available the School and Team Profile, a Discussion Forum, Links and the Title of the production. The rest of the information varies. Each team is able to select the way that the information concerning the production will be presented to the web site. There are four predetermined interfaces with different kind of information and layout in each one. The information that is contained in each interface is:

- Interface 1:
  - o Title of the production
  - o Video file
  - o Subtitles
  - o Additional Information concerning the production
- Interface 2:
  - o Title of the production
  - o Video file
  - o Subtitles
  - o Discussion Forum
- Interface 3: it used when students select to make a flash animation production instead of a video
  - o Title of the production
  - o Flash Animation
  - o Additional Information concerning the production
- Interface 4: it is used when students have developed a large video file. Since it is not possible to play over Web a large video file, it has to be separated into smaller video files that have duration about 7 minutes each. The students can develop up to 5 video files.
  - o Title of the production
  - o 5 video files
  - o 5 subtitle files
  - o Additional information that concerns the production

### 3.2.2 Authorization System

There is an administrator responsible of the smooth running of the WebTV for Schools platform and the manipulation of users. His/her obligations are to add or delete users to the system, update predefined information such as the theme categories, supervise the discussion forum.

The user's categories that need to have access to the restricted area through the Authorization System are Teachers, Students, Pedagogues, and Technicians. When the administrator creates a new user, his/her login, password, name, surname, specialty on the project and institute that belongs, are stored in the database.

Specifically, each school has one account, which teachers along with students use in order to store their emissions in the database. When the administrator creates that account, at the same time, he/she submits to the database the name, the country and the address of the school. This is the minimum information provided for the school profile and none can change it or delete it but the administrator. So, the school user can only enrich this profile by adding a description or some photographs or an e-mail etc (see the description below concerning the school profile at the Uploading Interface). Additionally, each school user has access only to the productions and files that owns. He/she is not able to change or manipulate information submitted from other schools during the Uploading procedure.

### 3.2.3 Members' Area

The Member's Area consists of all the necessary components that will guide and help students and teachers to implement the activities in the frames of the school and the schoolroom. It is the restricted access part of the WebTV for schools Web Site. As already mentioned, it will constitute the medium of communication among partners that helps them to exchange ideas, evaluate the project and reach to conclusions. It also provides useful information regarding project's run and inform them of the important for deliverables dates.

The information that is available in Members' Area is:

- ✓ Discussion Forum: it includes two main categories
  - Discussion forum for pedagogical problems and issues
  - Discussion Forum for technical problems and issues

Each one of them includes more specific categories that are specified based on the categories of the On Line Help.

- ✓ On Line Help: in this area, all the training material, categorized by the subject and the stages of the project's implementation, is stored. Some of the basic informational categories, which the system could offer are:
  - Pedagogical framework
  - Planning video
    - Developing the project idea
    - Schedule
    - Research
    - Implementation scenarios and storyboards
    - Assigning roles

- o Producing video
    - Gathering material
    - Using the camcorder
    - Transferring the video to the computer
    - Video editing
  - o Uploading information to the server
  - o Using the WebTV platform
  - o Evaluation
- ✓ Uploading Interface: it is the procedure that a team has to follow in order to upload and store all the necessary information in the database.
  - ✓ FAQ: it consists of the most important questions and answers on pedagogical and technical problems, approaches and procedures as a result of the daily activities, study, creation and use.
  - ✓ Schedule: here are displayed all the important dates for project's deliverables.
  - ✓ Project Outcomes: all the project outcomes, such as Approaches, scenarios, school and team profiles etc, are available for internal consumption.
  - ✓ Evaluation: here are stored all the necessary questionnaires and the given answers of the students and teachers.
  - ✓ Video Conference: through this option the students of the classroom could communicate with each other for exchanging ideas in real time.

### 3.2.4 Uploading Interface

The WebTV for Schools Platform is a distributed learning environment developed to meet the pedagogical principles defined by the WebTV for Schools project. The Platform consists of four main components:

- The Uploading Interface is the mechanism used to prepare and to upload the emissions. Data verification and optimization of the students' emissions is possible at any stage of the production procedure in order to ensure that the transmission quality will be as good as possible for the spectators through the Web.
- The Database where the emissions are stored along with specific information on each emission, such as date of creation, subject, duration, school nationality, language, etc.
- The Data Retrieval Tool that retrieves the emissions from the Database either by category or by keyword/s

- The WebTV User's Interface delivers the content of the platform according to the students' request or to the selected programme.

The purpose of the manual is to provide guidelines to the WebTV teams on how to use the Uploading Interface.

### 3.2.4.1 Uploading Interface System

The Uploading Interface is the medium through which all the necessary information about a production is gathered in order to be displayed on the WebTV for Schools Users Interface (Figure 3.3). The Uploading System works best with the last version of the Explorer, Windows XP and java.

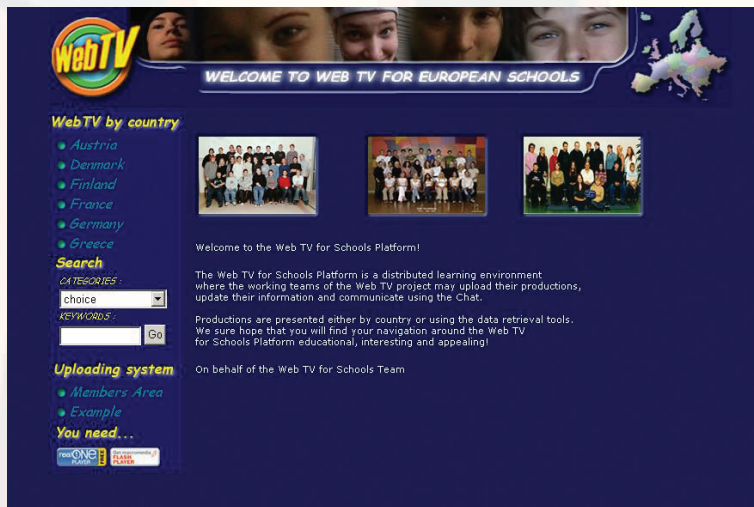


**Figure 3.3:** The Uploading Interface Environment

After the completion of a production, and not earlier, each team must follow the procedure described below in order to store into the database the required information. The Uploading Interface is located in the Members' Area. By clicking on the Members' Area Heading a new window appears (Figure 3.4) and a user's code and a password are required. Enter your user code and password and click the "SEND" button (or just press the key "Enter"). The users' codes and the passwords are provided by the Platform Administrator.

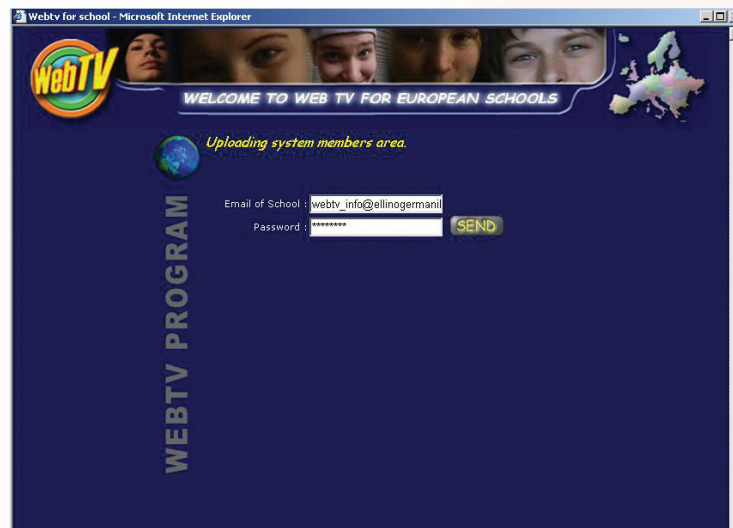


**Figure 3.4:** Login the Members' Area: Uploading Interface

You will be directed at the Uploading Interface (Figure 3.5). The left bar menu displays all the actions than a user can do and the right side displays the result/s of the user/s actions.



**Figure 3.5:** Uploading Interface

### 3.2.4.2 Production

In terms of the productions there are four functions:

- a) to Add a new production,
- b) to Update the information of a stored production c) to Delete a production and d) to add Subtitles.

#### 3.2.4.2.1 Add

The system welcomes the user (1). Under the welcoming note a menu is displayed that describes step by step the uploading procedure (2).

On the top there is a red box with the abbreviation escape (3); by clicking it the user may log off anytime. On the left corner the system provides guidelines on the action to be taken by the user. A small red box indicates that the action is obligatory to proceed to the next step (4) (Figure 3.6).

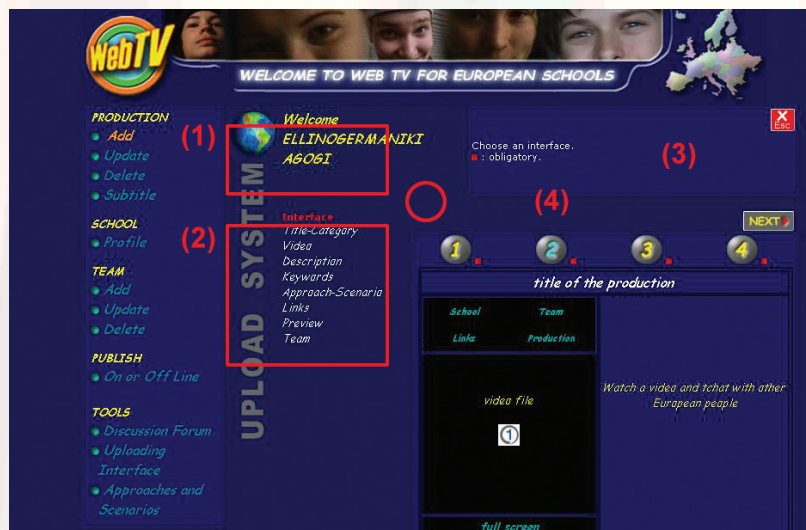


Figure 3.6: Add a New Production

At each step of the procedure the corresponding link on the left bar is highlighted. For example, on the picture above the link "Interface" is highlighted in red.

The steps that need to be followed in order to upload successfully a production are presented below:

### Step 1: Interface

The production may be presented in four different ways: Interface 1: video, images and description (text); Interface 2: video, photo of the school and chatboard; Interface 3: flash file, images and description and Interface 4: three videos, images and description. The user may preview each the interfaces before making a decision. Step 1 is obligatory and the user may not proceed unless an Interface is selected. By clicking the “NEXT” button the user may proceed to the next step (Figure 3.6).

### Step 2: Title – Category

Click on the arrow at the Category field to open the drop-down list of all categories. Select the category on which the production is based by clicking on the respective category title. In the field “Title” type in the title of the production (Figure 3.7). This title will appear in your school’s program (Figure 3.8). Click “NEXT” to proceed or “BACK”, if you need to revise your selections.



*Figure 3.7: Select category and add title functions*



*Figure 3.8: List of productions by title*

### Step 3: Production File

Depending on the Interface type that was chosen (Step 1), the video or the flash file must be uploaded. Acceptable are files having as extension rm for video files or fla for flash files (note that the extensions need to be in small letters). If a video file is uploaded then the corresponding subtitling file may be uploaded as well.

In case:

- interface 1 or 2 was selected, one video file must be uploaded
- interface 3 was selected, one flash file must be uploaded
- interface 4 was selected, then more than one and up to five (1-5) different video files may be uploaded.

To upload a file press the “Browse” button; in the active window that appears, open the location where the file is stored, select the file and press the “Open” button. Click “NEXT” to proceed or “BACK”, if you need to revise your selections (Figure 3.9).

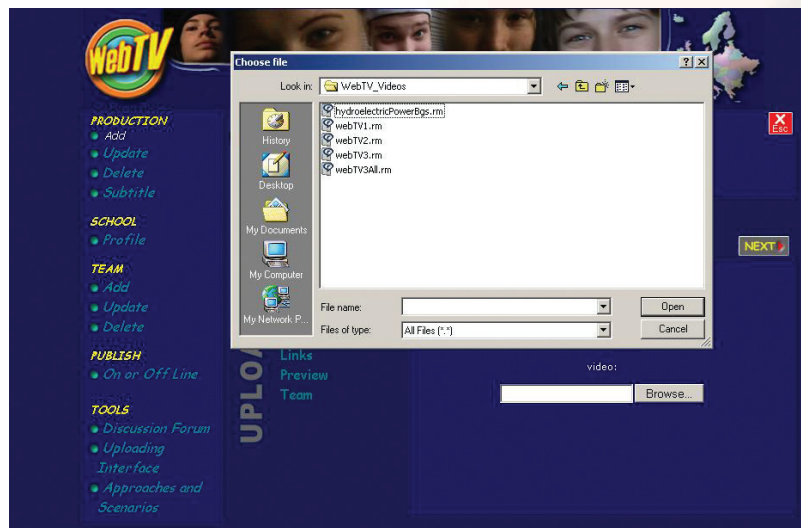


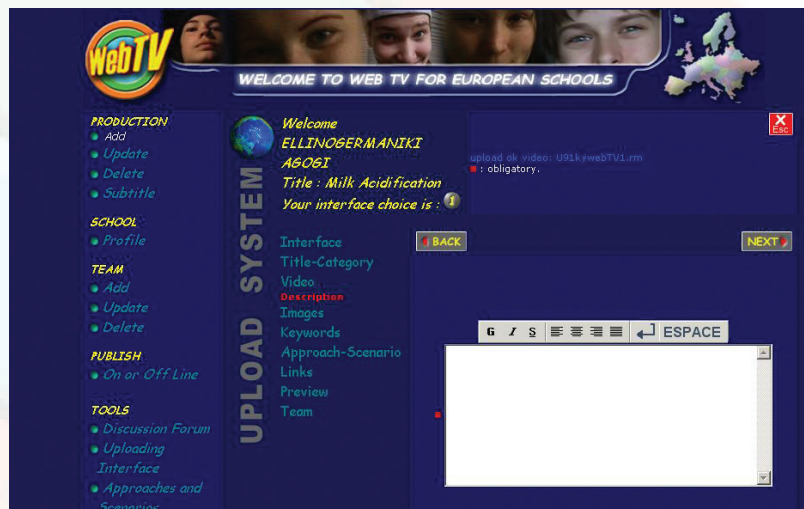
**Figure 3.9:** Upload the file (video or flash)

#### Step 4: Description

Write a description (summary) of the production in the blank field. The toolbar above the field includes simple html commands, such as:

- G (<b></b>): to make the text bold
- I (<i></i>): to make the text italic
- S (<u></u>): to underline the text etc to format the text (Figure 3.10).

Click “NEXT” to proceed or “BACK”, if you need to revise your selections.



## Step 5: Images

If the selected Interface is No 1, or 3 or 4 – in other words any Interface except for No 2 - the user may add images. To upload an image the procedure is the same as in Step 3 (Figure 3.11).



Press the “Browse” button and in the active window that appears open the location where the image is stored, select the file and press the “Open” button. If you wish to upload more than one image press the “ONE MORE IMAGE” button and repeat the procedure. Click “NEXT” to proceed or “BACK”, if you need to revise your selections.

### Step 6: Keywords

In the blank field enter the keyword best describing your production. Press the “ONE MORE KEYWORD” button to add the next keyword (Figure 3.12). The inserted keywords appear besides the note describing the process. The keywords will be used as search criteria by the Data Retrieval Tool. Click “NEXT” to proceed or “BACK”, if you need to revise your selections.



Figure 3.12: Enter keywords

The keywords can be deleted by pressing on “delete”. A new window appears and confirmation is required (Figure 3.13).



Figure 3.13: Delete keyword

### Step 7: Approach / Scenario

The uploading procedure of the approach and /or the scenario is the same as in Step 3 (Figure 3.14). Press the “Browse” button and in the active window that appears open the location where the file is stored, select the file and press the “Open” button. The acceptable format is files with extension .doc or .pdf (in small letters). Click “NEXT” to proceed or “BACK”, if you need to revise your selections.



Figure 3.14: Add the Approach/Scenario

**Step 8: Links**

During this step you may upload links related to your production. Insert in the blank fields the title of the link, the url and a short description (text). The inserted links appear besides the note describing the process. Click on the “ONE MORE LINK” button to add another link. Click “NEXT” to proceed or “BACK”, if you need to revise your selections (Figure 3.15).



The screenshot shows the WebTV interface for European Schools. The top banner features the WebTV logo and a welcome message. The left sidebar contains a menu with categories: PRODUCTION (Add, Update, Delete, Subtitle), SCHOOL (Profile), TEAM (Add, Update, Delete), PUBLISH (On or Off Line), and TOOLS (Discussion Forum, Uploading, Interface, Approaches and Scenarios). The main content area is titled 'WELCOME TO WEB TV FOR EUROPEAN SCHOOLS' and displays a 'Welcome' message for 'ELLINOGERMANIKI AGOST'. Below this, there is a form for adding links. The form includes fields for 'Title of link', 'Link', and 'Description', each with a red asterisk indicating it is obligatory. There are also buttons for 'BACK', 'NEXT', and 'ONE MORE LINK'.

Figure 3.15: Add Links

**Step 9: Preview**

At this stage you may preview your production. If the result meets your expectations you may click “NEXT” to proceed. If not, click either the “BACK” button to go one step before or the link of the bar menu describing the step that should be revised (Figure 3.16).



Figure 3.16: Preview Video

### Step 10: Team

A prerequisite action for this step is to have added the team members (a procedure described below under the heading “Team”). If the members of the team are added, then a list will appear and the user may select the teachers and students that participated in the production currently uploaded (Figure 3.17). To select a member left click on the white box beside the name of the member. To deselect a member left click the tick in the box. You may add members by clicking the “NEW MEMBER” button. By clicking the “UPDATE” button the production will be published at your school’s programme area.

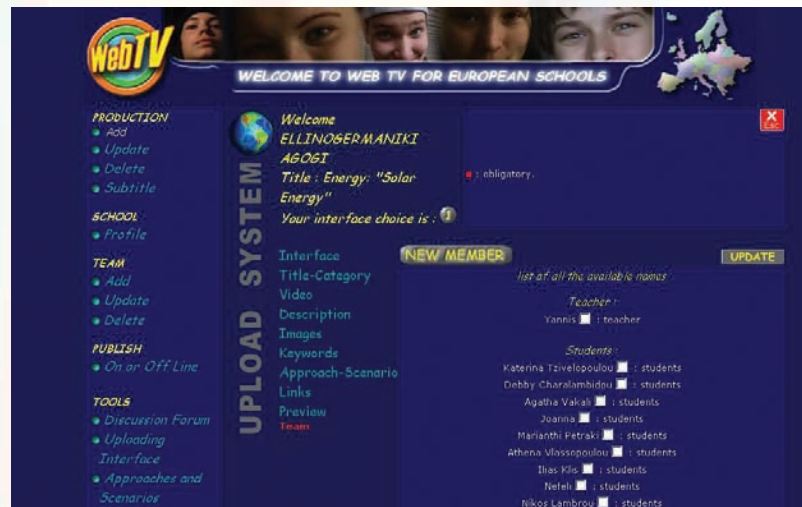


Figure 3.17: Add Team Members

### Step 11: End of the Uploading Session

The user has three options at this stage (Figure 3.18):



**Figure 3.18:** Options to End the Uploading Session

a) to select the “Publish your production” option click the “OK” button besides the phrase. A new page opens that includes the title of the productions uploaded (Figure 3.19). The user needs to select the production to be processed.



**Figure 3.19:** Production Titles

Then the user needs to decide whether the production will be available on-line or off-line (Figure 3.20). It is recommended to select the on-line option only for completed productions that will not be further revised.



**Figure 3.20:** Production Status

By pressing the “CONFIRM” button the production is published on-line or available off-line depending on the choice made at the previous step.

- b) to quit and close the session click on the ESC button.
- c) to select the “Create a new production” option click the “OK” button besides the phrase. A new uploading session will start.

### 3.2.4.2.2 Update

The users may update their productions anytime. Except for the first step of the production (Figure 3.21), the next steps are exactly the same:

#### Step 1: Select the production you wish to update

By clicking the Update option on the left bar menu a list of all uploaded productions appears. Both on and off line productions appear.

The user may select the production to be updated by left clicking on the white circle besides the production title.

By clicking the “NEXT” button the user may proceed to the next steps which are exactly the same as for uploading a production.

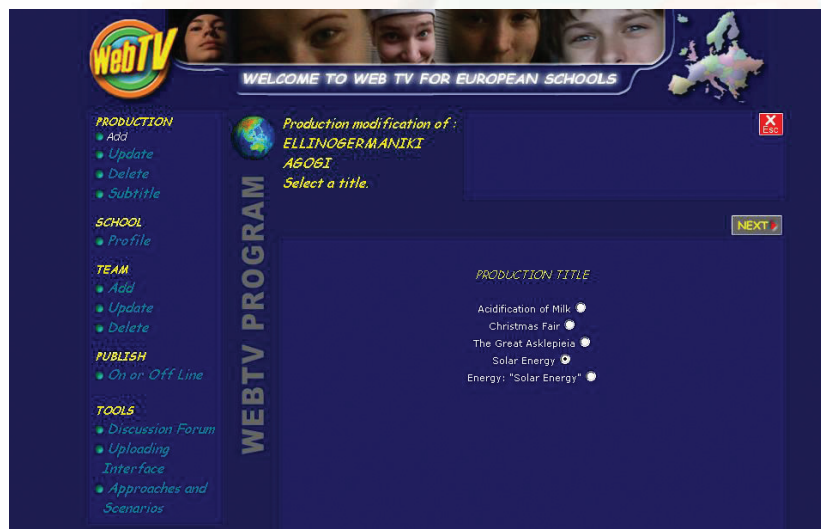


Figure 3.21: First Step of the Update Procedure

The user does not need to go through the whole process. By clicking on the menu bar (describing the updating steps) the user may go directly to the step that needs to be updated. The navigation is the same as in the uploading procedure (“NEXT” and “BACK” buttons or clicking on the menu bar).

In order to update and exit the user needs to select “Team” (no matter if modifications will be made or not) and then click the “UPDATE” button.

### 3.2.4.2.3 Delete

#### Step 1: Select the production you wish to delete



The user selects the option Delete. A list of all uploaded productions appears (Figure 3.22). The user has to left click on the white circle beside the title of the production that wishes to delete and then click the “Delete” button to proceed to the next step.

**Figure 3.22:** Delete a Production

#### Step 2: Confirm

A preview of the selected production to be deleted appears (Figure 3.23). If this is not the production to be deleted the user may click the “BACK” button to return to the list of productions in order to select another production. If the user is certain that the selected production should be deleted confirms by clicking the “CONFIRM” BUTTON.

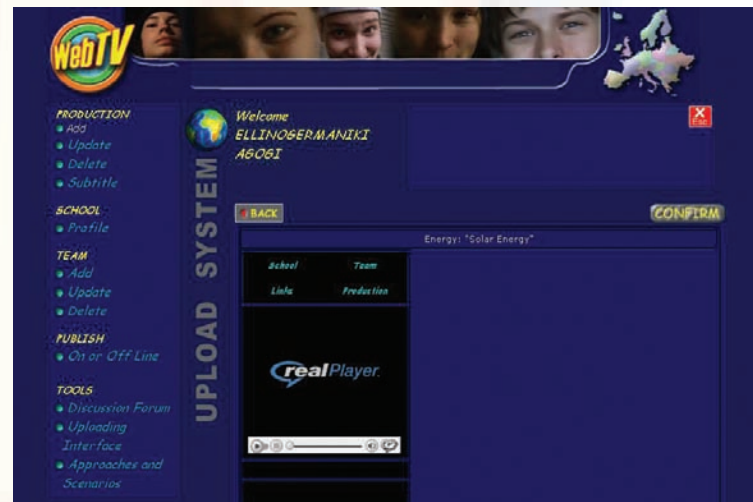


**Figure 3.23:** Preview of the production to be deleted

### 3.2.4.2.4 Subtitles

#### Step 1: Select the production you wish to provide with subtitles

The user selects the option Subtitle. A list of all uploaded productions appears (Figure 3.24). The user has to left click on the white circle besides the title of the production that wishes to provide subtitles with and then click the “SELECT” button to proceed to the next step.

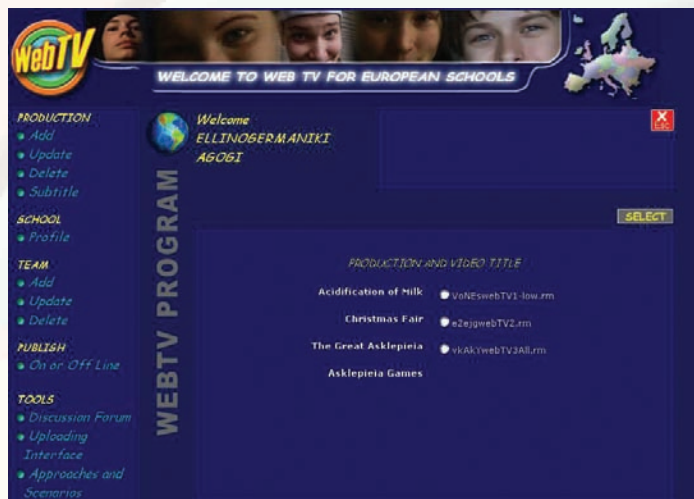
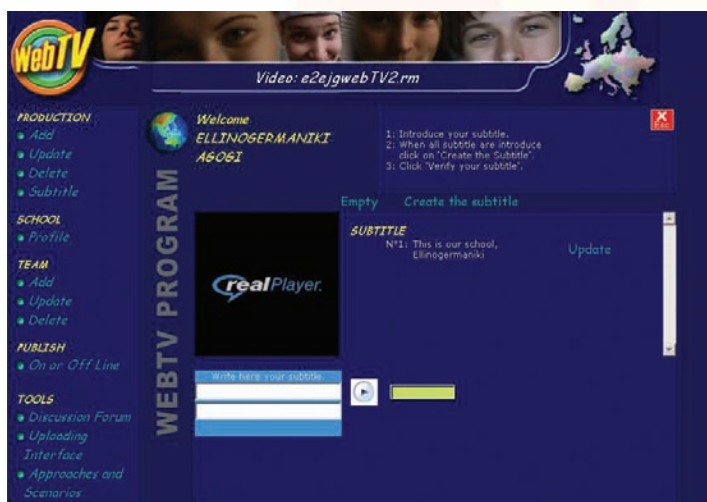


Figure 3.24: List of productions

#### Step 2: Insert the subtitles text



Under the Real Player window that displays the video there are two blank lines (Figure 3.25). Enter the text of the first subtitle, up to 20 characters, and press the Play button

Figure 3.25: Writing the subtitle

The system is running. The video is displayed and the user needs to press the Pause button when the subtitle needs to change (Figure 3.26)

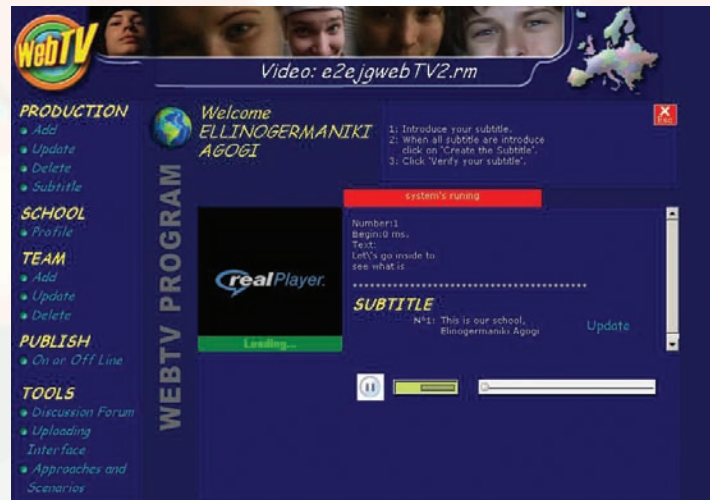


**Figure 3.26:** Synchronize the video with the subtitle

Under the heading Subtitle the first title appears. In case you need to edit the subtitle click the Update button (Figure 3.27)

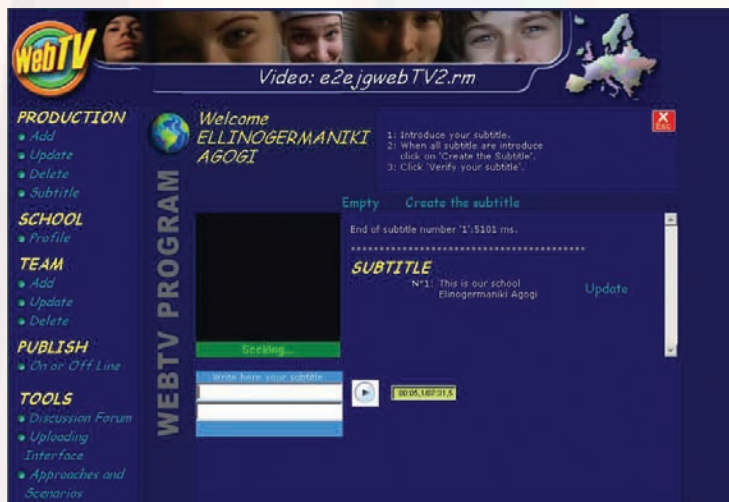


**Figure 3.27:** Revise the subtitles

A new window appears where the subtitle can be edited (Figure 3.28).

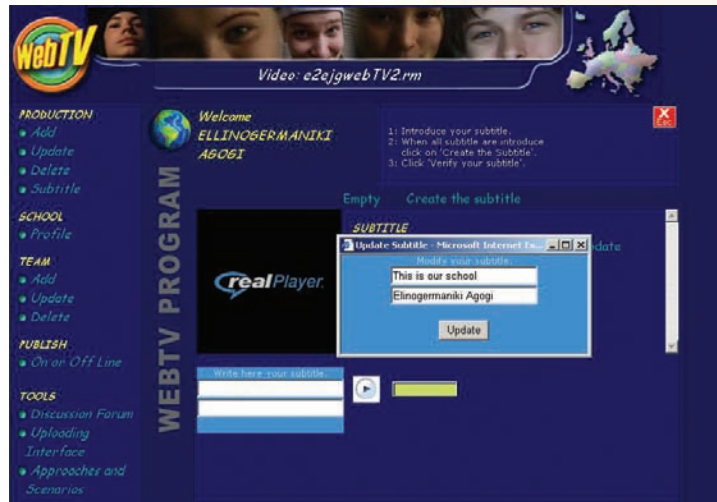
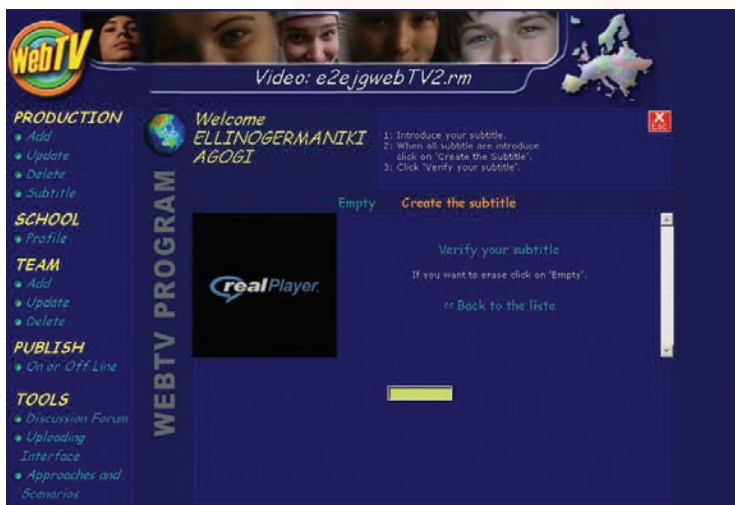


**Figure 3.28:** Edit and Update the subtitle

Repeat the above process as many times as necessary to insert all your subtitles.

### Step 3: Complete the Process



As soon as all subtitles have been inserted click on the “Create the Subtitle” option.

To complete the process click on the “Verify the Subtitles” option.

To go back to the subtitles list click on the “Back to the List” option.

To delete the subtitles click on the “Empty” option (Figure 3.29).

**Figure 3.29:** Complete the Subtitling Process

### 3.2.4.3 School Profile

#### Step 1: Enter the School's Data

The school's name and address are already submitted in the database and retrieved by the system when the user logs in. You may type in the blank fields the requested information. To upload a photo press the "Browse" button; in the active window that appears, open the location where the photo is stored, select the file and press the "Open" button. Click "NEXT" to proceed (Figure 3.30).



**WebTV**  
WELCOME TO WEB TV FOR EUROPEAN SCHOOLS

**UPLOAD SYSTEM**

**PRODUCTION**

- Add
- Update
- Delete
- Subtitle

**SCHOOL**

- Profile

**TEAM**

- Add
- Update
- Delete

**PUBLISH**

- On or Off Line

**TOOLS**

- Discussion Forum
- Uploading Interface
- Approaches and Scenarios

Welcome  
**ELLINOGERMANIKI AGOGI**

**NAME:** ELLINOGERMANIKI AGOGI  
**ADDRESS:** Ellinogermaniki Agogi Do.  
**COUNTRY:** Greece  
**TELEPHONE:** +30 210 6032550  
**FAX:** +30 210 6032554

**DESCRIPTION:** The class participating in the WEB TV project is the 3rd of Gymnasium. The students' age is around 15 years. In High School, Ellinogermaniki Agogi places emphasis on the quality of lessons, the intense

**URL:** http://www.ellinogermaniki.gr  
**EMAIL:** webtv\_info@ellinogermaniki.gr

**UPLOAD PHOTO:**

**NEXT**

Figure 3.30: The School's Data

A preview of the information inserted appears (Figure 3.31). Click the "BACK" button to revise the information or the "CONFIRM" button to complete the procedure.



**WebTV**  
WELCOME TO WEB TV FOR EUROPEAN SCHOOLS

**UPLOAD SYSTEM**

**PRODUCTION**

- Add
- Update
- Delete
- Subtitle

**SCHOOL**

- Profile

**TEAM**

- Add
- Update
- Delete

**PUBLISH**

- On or Off Line

**TOOLS**

- Discussion Forum
- Uploading Interface
- Approaches and Scenarios

Welcome  
**ELLINOGERMANIKI AGOGI**

**NAME:** ELLINOGERMANIKI AGOGI  
**ADDRESS:** Ellinogermaniki Agogi  
Oukissis Plakentias 25 GR  
152 34 Chalandri  
**COUNTRY:** Greece  
**TELEPHONE:** +30 210 6032550  
**FAX:** +30 210 6032554

**DESCRIPTION:** The class participating in the web TV project is the 3rd of Gymnasium. The students' age is around 15 years. In High School, Ellinogermaniki Agogi places emphasis on the quality of lessons, the intense teaching of two foreign languages, the uses of Information Communication Technologies in the educational process and the development of an integrated, comprehensive plan of various types of activities meeting teenagers' needs and interests. The school enhances the participation in projects that provide students with opportunities to work collaboratively on many different topics, under the guidance of their teachers, to learn to use the scientific methods, to obtain experiences, to resolve everyday problems and generally to act as mature people. The

**BACK** **CONFIRM**

Figure 3.31: Confirmation of the School's Data

The School's profile appears when the visitors of the WebTV User's Interface click the link School in the production window (Figure 3.32).



**Figure 3.32:** School's Profile

#### 3.2.4.4 Team Profile

The team members may be either teachers or students. Each member of the WebTV team needs to insert his/her data in the database of the system.

There are three functions that can be done, as per uploading a production, which are: a) to add a profile of a team member, b) to update the info of a member's profile and c) to delete a profile.

### 3.2.4.4.1 Add a profile of a team member

#### Step 1: Occupation



The user needs to indicate if he/she is a teacher or a student by selecting his/hers status from the drop down list (Figure 3.33). To proceed he/she needs to click on the “NEXT” button.

Figure 3.33: Indicate status

#### Step 2: Personal Data

The user depending on the choice made during the previous step needs to fill in his/her personal data.

If the user is the teacher (Figure 3.34), he/she will be guided to the following page:

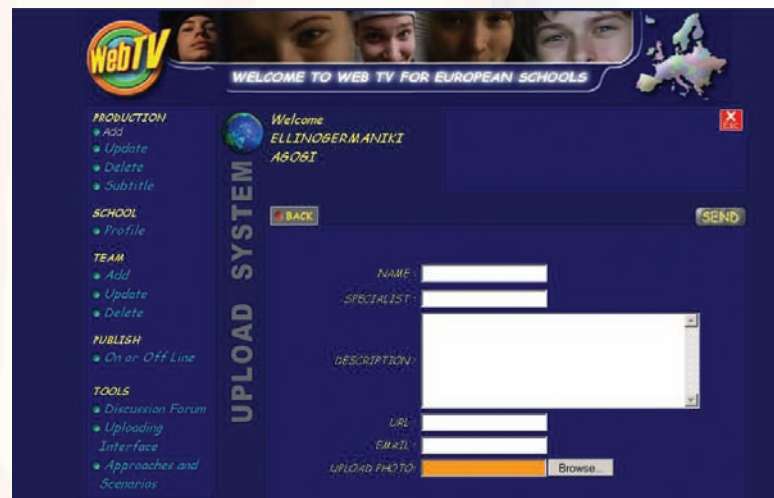


Figure 3.34: Teacher User

If the user is a student (Figure 3.35), he/she will be guided to the following page:

The screenshot shows the 'WebTV' logo at the top left and a banner with the text 'WELCOME TO WEB TV FOR EUROPEAN SCHOOLS' and a map of Europe. Below the banner, a sidebar on the left lists navigation options under the heading 'UPLOAD SYSTEM':

- PRODUCTION**
  - Add
  - Update
  - Delete
  - Subtitle
- SCHOOL**
  - Profile
- TEAM**
  - Add
  - Update
  - Delete
- PUBLISH**
  - On or Off Line
- TOOLS**
  - Discussion Forum
  - Uploading Interface
  - Approaches and Scenarios

The main content area displays a 'Welcome' message to 'ELLINOGERMANIKI AGOGI'. Below this, there are input fields for 'NAME', 'AGE', 'DESCRIPTION', 'URL', and 'EMAIL'. A 'BROWSE...' button is next to the 'UPLOAD PHOTO' field. 'BACK' and 'SEND' buttons are located at the top of the form area.

**Figure 3.35:** Student User

Note that if the user is a teacher the “Specialist” field appears while when the user is a student the “Age” field appears instead.

By clicking the “SEND” button the procedure is completed and the data is available in the database for future use (for instance the member is included in the list that appears when indicating the members of a Team during the Uploading or the Updating a production procedure).

### 3.2.4.4.2 Update a profile of a team member

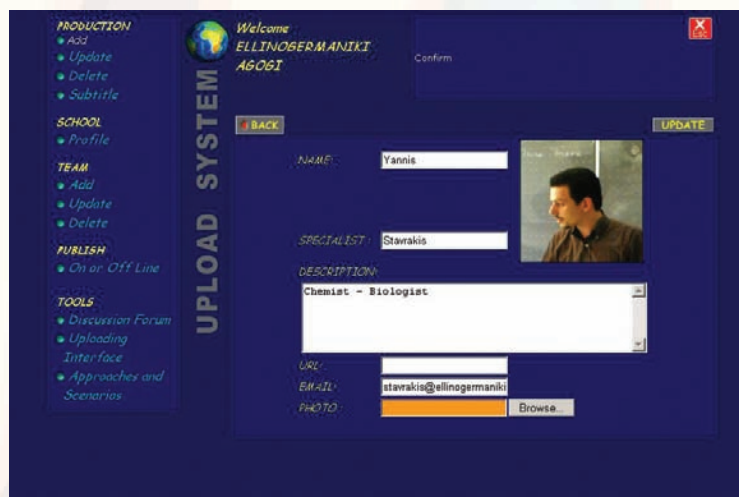
#### Step 1: Select the member

Select from the list the teacher's or the student's name, whose data need to be updated by clicking on the circle on the left of the name (Figure 3.36) and then click the "UPDATE" button to proceed.



Figure 3.36: List of Users

#### Step 2: Update the data



The stored profile information of the chosen member is displayed. The user may update the information (Figure 3.37). By clicking the "UPDATE" button the information is saved in the database and by clicking the "BACK" button the user returns to the previous step and may choose another member from the list.

Figure 3.37: Teacher's Profile

### 3.2.4.4.3 Delete a profile of a team member

#### Step 1: Select the member

The procedure is similar to the deletion of a production. The user may choose the name of the member that should be deleted by clicking the circle beside the name (Figure 3.38) and then click the “DELETE” button to proceed.



Figure 3.38: List of Users

#### Step 2: Confirm



The information of the selected member is displayed (Figure 3.39) and the user may either confirm the deletion by clicking the “CONFIRM” or by clicking the “BACK” button return to the previous step and select another member from the list.

#### Important Note:

*Teachers should better delete productions or profiles themselves as the students may by mistake delete a production or a profile that should not be deleted or supervise the process.*

Figure 3.39: User's Details

### 3.2.4.5 Publish

As mentioned above the productions may be available off-line or on-line. When the production is available off-line the user may update it anytime but it does not appear in the WebTV Users' Interface (strongly recommended for incomplete productions). When the production is available on-line it appears in the corresponding program of the school/country (recommended for completed productions).

#### Step 1: Select a production

A list of all submitted productions appears and their status is indicated on the right of the title (on or off line, Figure 3.40). The user selects the production of which the status needs to be changed by clicking the circle in between the title of the production and the status. By clicking the "SELECT" button the user proceeds to the next step.



Figure 3.40: List and Status of Productions

**Step 2: Select status**

The title of the selected production appears and on the right the status: online and offline (Figure 3.41). By clicking the circle on the left of the desirable option the production is stored accordingly. By clicking the “CONFIRM” button the information is stored in the database and by clicking the “BACK” button the user returns to the previous step of the procedure.

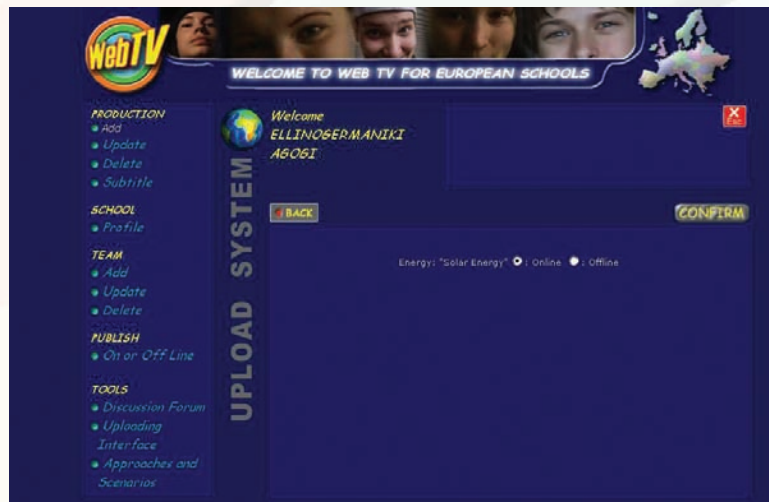


**Figure 3.41:** Status of the Production

**3.2.4.6 Tools**

There is a communication tool available at the Uploading Interface the Discussion Forum, a tool that summarizes the productions available and displays a list of them and a tool that summarizes and displays information on the approach and the scenario of each production.

**3.2.4.6.1 Discussion Forum**

The Discussion Forum is an asynchronous communication tool. The user by clicking on the “Question” button (Figure 3.42) may post a message and ask for a certain response, post an informative message etc.

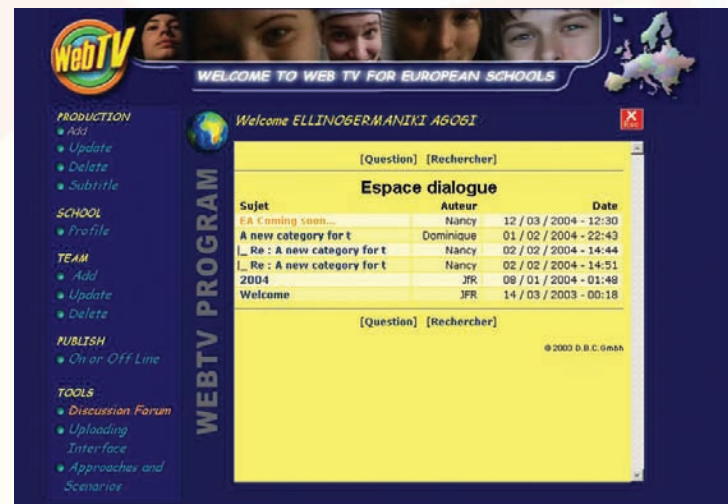


Figure 3.42: Questions

By clicking on the “Rechercher” button (Figure 3.43) the user may search information by keyword or by author. Instructions about the searching process are available in French.



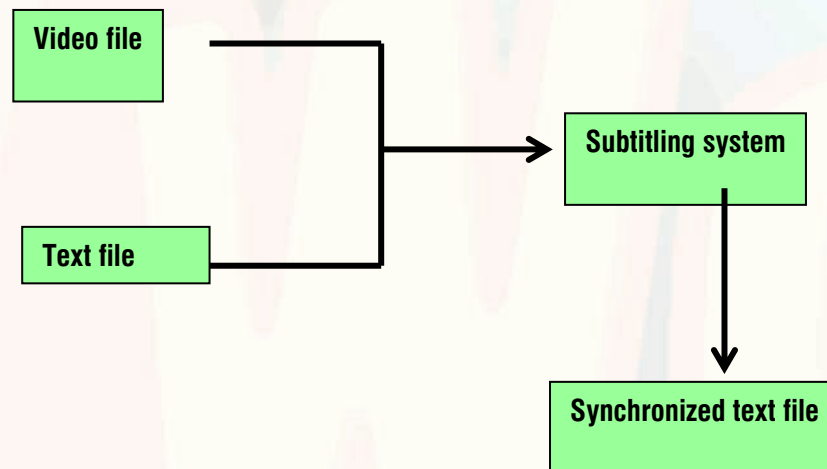
Figure 3.43: Search by keyword or author

### 3.3 Database

The database, in which all the gathered information through the Uploading procedure is stored, is a classical MySQL database. The information stored in the tables and relations among these tables are also presented.

### 3.4 Subtitling System

When students have completed their video, they must add subtitles in English language and synchronize them with it. These subtitles will be displayed in the subtitle area of the WebTV User Interface as presented above. They will be the translation of the narrations and dialogues during the video display.



### Synchronize subtitle (1)

#### Unsynchronized File

Subtitle 3  
Subtitle 4  
Subtitle 5  
Subtitle 6

...

...

...

Video Production

Video Control Buttons

Start/End Time of the Subtitle

>

>>

>

#### Synchronized File

Subtitle 1  
Subtitle 2

### Synchronize subtitle (1)

#### Unsynchronized File

Subtitle 4  
Subtitle 5  
Subtitle 6

...

...

...

Video Production

Video Control Buttons

Start/End Time of the Subtitle

>

>>

>

#### Synchronized File

Subtitle 3  
Subtitle 2  
Subtitle 1

**OnClick** on the ">>" button the subtitle from the **Unsynchronized** list is automatically entered in the **Synchronized** list. The start time of the subtitle is when the user pressed the button and the end time is after 2 seconds. This is an option that can be set from the user of the subtitling user.

## Synchronize subtitle (2)

## Unsynchronized File

Subtitle 4  
Subtitle 5  
Subtitle 6  
...  
...  
...

Video Production

Video Control Buttons

Start/End Time of the Subtitle

Subtitle 3

>

>>

>

## Synchronized File

Subtitle 2  
Subtitle 1

## Synchronize subtitle (2)

## Unsynchronized File

Subtitle 4  
Subtitle 5  
Subtitle 6  
...  
...  
...

Video Production

Video Control Buttons

Start/End Time of the Subtitle

New Subtitle 3

>

>>

>

## Synchronized File

Subtitle 2  
Subtitle 1

**OnClick** on the left “>” button the subtitle from the **Unsynchronized** list is entered in the area below the **Start/End Time** where the user has the ability to correct the subtitle. The start time of the subtitle is when the user pressed the “>” button.

**OnClick** on the right “>” button the changed subtitle is entered in the synchronized subtitle list. The end time of the subtitle is when the user pressed the right “>” button.

### Synchronize subtitle (2)

#### Unsynchronized File

Subtitle 4  
Subtitle 5  
Subtitle 6

...

...

...

#### Synchronized File

New Subtitle 3  
Subtitle 2  
Subtitle 1

Video Production

Video Control Buttons

Start/End Time of the Subtitle

>

>>

>

The new subtitle is entered in the **Synchronized** subtitles.

## Correct already Synchronized subtitle

## Unsynchronized File

Subtitle 3  
Subtitle 4  
Subtitle 5  
Subtitle 6  
...  
...  
...

Video Production

Video Control Buttons

Start/End Time of the Subtitle

>

>>

>

<

## Synchronized File

Subtitle 2  
Subtitle 1

## Correct already Synchronized subtitle

## Unsynchronized File

Subtitle 4  
Subtitle 5  
Subtitle 6  
...  
...  
...

Video Production

Video Control Buttons

Start/End Time of the Subtitle

Subtitle 2

>

>>

>

<

Subtitle 1

The user has the ability of correcting a subtitle, which has already been synchronized, by clicking on the "<" button. This moves the subtitle in the area where user can make further corrections on it

The user can make changes on the subtitle and then by pressing the right ">" button to move it to the synchronized list again, as described above.

## Chapter 4

### **Web TV Movies Production**

#### **4.1 Preparing a Scene and Shooting**

Whether you are creating an one minute short video about a family event, or a one hour documentary about a pressing special issue, just remember these basic points – tell a story with your production, make sure you are comfortable with your equipment, including the camcorder, audio and tripod, and expect things to go wrong and have a work around plan and gear just in case. Of course, since you are planning to put your video on the web, you will also have to deal with compression, uploading, bandwidth restraints and the other issues associated with streaming and web based video.

#### **Shooting Movies for the Web**

The process of making movies for the Internet is not altogether different from making classical films, but there are several distinctions that will call for special attention. When shooting for the Web, you should begin with the end in mind: Watching Net cinema is a



radically different experience than seeing a movie in a television set or cinema. The width of the screen (the monitor window of most multimedia players) is three inches, not thirty feet. The typical Web surfer huddles only 15 inches away from the image, not 150 feet. The factors that determine how your movie will appear over the Web are governed by the video-compression software used to squeeze your raw DV signal into a video file. For this reason, you need to consider several shooting methods that can dramatically improve the Web movie experience.

### **Cinematographer and his staff**

The cinematographer is the source of information on all things to do with the camera. The knowledge that the cinematographer is required to know encompasses photography composition and processes, lighting, and camera movement. Cinematography is therefore very involved with each shot of a film. The following staff work under and report to the cinematographer:

- Camera Operator, who may have further assistants to operate and maintain the cameras.
- Key Grip, supervisor of the team of grips. The grips carry and arrange equipment and props, as well as set and lighting parts.
- Gaffer, that often-puzzling name which is really the head of electrics. The gaffer supervises organisation and positioning of lights.

### **The Director**

The director is generally in charge of those phases in production which require the camera and editing; co-ordinating the look of the film and how these 'looks' are assembled together. The director's aim is to give an ideal picture of the scene, in each case placing his camera in such a position that it records most effectively the particular piece of action or detail which is dramatically significant. He becomes, as it were, a ubiquitous observer, giving the audience at each moment of the action the best possible viewpoint. The director and cinematographer very often work together on how each scene will be shot and lit.

### **Equipment**

Concerning equipments, the cinematographer uses film cameras running at the agreed standard of 24 frames per second (fps), cinematographers are limited in the choice of shutter speeds they can use. The shutter speed therefore cannot exceed 24fps. They can, however, control exposure time by using a variable speed camera. For internet movies around 14 fps are enough.

If your camcorder supports it, turn on the start and stop beeps. Also, if your camcorder provides, make sure the time code or footage meter is displayed in the viewfinder or foldout LCD view screen. Another good technique to practice with your new camcorder is zooming. Some zoom controls are very touchy while some are smooth as silk. Almost every camcorder now comes with variable touch zoom control. The harder you push, the faster the zoom goes. Practice with it so that you know just how much touch is needed to do a slow zoom versus a crash zoom. Also play with focus. Even though auto focus works great most of the time, there are some moments when you will need to focus manually. Know how to find that focus ring in the dark; learn which way you need to turn the focus ring. What about manual overrides, transitions and special effects? If you use controls like white balance, aperture, shutter speed, etc., practice with them before using them for the first time in the field. If your camcorder supports it, check out the various auto exposure modes and see how they affect your camcorder. Sometimes modes like Sports, Sun & Ski, Landscape, etc., can be very helpful. On other camcorders they may not do much at all.

Another question is how light sensitive is your camcorder? How much light do you really need to make nice pictures? You need to know before you volunteer to shoot a wedding ceremony in a candlelit church how your camcorder is going to respond in that low lighting. Will you need to make special adjustments to the manual controls like aperture, shutter speed and gain? Do you even know where your aperture, shutter and gain controls are?



### **Special Effects or Not**

If you apply a special effect to your video while you are shooting, you are stuck with it. If you decide to use an “old time movie” effect while shooting your video, you can not go back later and get rid of it. That is why it is recommended adding all your special effects later in the editing process. That way the original footage stays pristine and perfect. Experiment with effects in the editing process. By the way, many new camcorders can now add these special effects during playback so that if you really want them, you can get them without affecting your original video. The biggest problem which has been noted with camcorder special effects is that sometimes they get accidentally turned on and you end up shooting your whole video without noticing that the image is stretched out to wide angle or that the image is tinted pink. In the rush of excitement when shooting a family event, it is easy to overlook the fact, especially in a dark hall, that something just doesn’t look right about the picture in the viewfinder. However, there may be times when you have to use special effects. Maybe you hate to edit or don’t have time to add additional effects. I know professional wedding guys who prefer to do many of their effects in camera. They have pre-set up “wedding day” stills with a series of graphics that can be used to superimpose over the live video. They also use pre-made stills to act as chapters between the various sections of the event.

**Be prepared as well as possible**

Be ready for all that can go wrong is the best way to prepare for a video shoot. For example – do you have enough batteries in case the ceremony or event goes long? Are they fully charged? If you do run out of charged batteries, did you remember to bring the AC power supply? OK, you got the power supply but did you bring power extension cords? How about some duct tape to tape down those cords so that people don't trip over them? How about videotape? Do you have enough? Do you have a good system for labelling and keeping track of your tapes? What about shooting outside events? Are you ready for all eventualities? What if it starts to rain or snow? What are you going to do if the sun sets?

**Shoot Too Much – Cover Your Scene**

Unless you are planning to edit your entire production in the camera, on location, feel free to overshoot. Tape is cheap. As long as you have power and tape, shoot as long as possible. Make sure you get lots of close-ups. Close-ups of faces, of presents, of the car, etc. Get shots of any documentation like signs, cards and banners. These kinds of shots, often referred to a b-roll in the professional world, often spell the difference between a boring chronological documentary of what happened at an event and a lively and exciting video production. You might want to hand off your camcorder to others and let them have a go. If you feel comfortable, bring some extra consumer camcorders, put them on full automatic, and hand them out. Let some of the other people at the event roam around and gather footage. Each video shooter has a personality. There are certain kinds of shots you will prefer to grab. By letting other personalities participate in the shooting process, you will get a much wider range of shots to select from. Of course, the negative is that you will have to watch and log these other tapes and unfortunately, much of it may simply be unusable.

**Audio**

If you want the audio to sound good you need to spend some time planning on how to capture interviews, music and other room sounds. Unfortunately, the built-in microphones on most camcorders are not very good. DV camcorders have the “potential” to capture great CD quality sound but once again, their built-in microphones border on average to poor. On many camcorders, especially those tiny little DV camcorders, the microphone is on top, perfect for catching room noise and little else. You will need to use some kind of external microphone plugged into your camcorder's audio in jack. Some camcorders, in particular, Sony, provide a mike power outlet as well. Either way, by using an external mike, you will be able to get much better quality audio. If you are working by yourself you can attach a shotgun mike to your camcorder and walk around the room, catching video and audio. Another option is to use a wireless microphone system. The receiver unit sits on your camcorder. You can then attach a wireless lavalier mike to whoever is speaking or you can hold a mike in your hand. If you can recruit a helper, it is often helpful to have someone walk around



the event conducting interviews with the guests and partygoers. If you have a helper, you can have them do these interviews with a hand held mike, or by using a mike on a boom, actually move in close enough to mike the various guests. Whatever option you choose, make sure you hook up your mike system before you go to the event and try it out. Play with it a while and make sure the connections are secure. Of course, if these are powered mikes, brings lots of extra batteries.

### **Have a Plan**

Every video you shoot tells a story. It has a beginning, middle and end. Whether you are simply documenting your kid's birthday party, a little league game or a wedding, every event has a structure. Obviously the easiest structure to follow is chronological. First this happened, then this, then this. You don't have to shoot in this order but your finished production should have a pattern and structure. For example, let us take a typical children's birthday party. You might want to start with interviewing your kid when he or she wakes up the morning of the party. You may then want to cut to a close-up of the invitation. This could serve as a great title section for the movie. Your next shots might be preparing for the party and getting everything ready. Your next shots could be a series of the guests arriving, then a montage of various party games cut to some cool rock and roll, and finally ending with everyone singing happy birthday, and opening up the presents. Document the guests leaving, the big mess in the house, and maybe then end with a still shot of your 5 year old napping after the big event. You get the idea. Create a story. Write down the shots you will need. Create a checklist to make sure you get all the shots you need. Of course, be open to "found" shots. Things just happen and you should be open to catching the unexpected. Depending on your computer and editing gear, you might want to edit all this in the camcorder, carefully shooting one scene after another. You can also connect two DV camcorders together via their 1394/FireWire ports and assemble edit between them, building your final presentation. And of course, if you have nonlinear editing software on your computer, you can edit your final production together and add sophisticated titles, effects and transitions.

### **Use of lights and lighting a scene**

Photography is painting with light: you start with a subject, and then add or subtract light to achieve the look you want. The goal of lighting is not to fill in all the shadows so that everything is lit evenly. The lights are your instruments for creating an effect or mood. Today's camcorders enable you to create an infinite variety of lighting effects. If all you do is use just the available light, you will probably get useable pictures. However, if you take the time to control the light in a scene, you can produce great pictures that work well with your story.

In professional moviemaking, producers can't afford to worry about the time of day or the weather. They defy nature by bringing lighting gear to create their own time and weather. If it's overcast, they can add sunlight. You probably won't

have that kind of flexibility and budget. In most cases, you won't be building a set and lighting it from scratch, but using real locations and adjusting the available light.

Here are things to think about as you work to light the shot:

- Look at the shot. With the camera set up and actors or stand-ins in position, study the lighting and notice how it works with the actors and the background. Does it accentuate the primary subjects? In the composition of the shot, is anything highlighted so that it competes with the subject for the viewer's attention? Does the lighting make sense with the story? Will the lighting in the shot match the lighting in other shots when they are edited together? Suppose that in the office you are using, there is only one artificial light, which sits on a desk behind the camera, plus strong, direct sunlight filtering through blinds on the other side of the room.
- Make decisions. Does the existing light work? In this example, you'd probably decide to eliminate the sunlight. It is so strong that the room light is too low for the given contrast ratio of the camera. In other words, everything that is not lit by sunlight is almost black. The sunlight also competes with the story. You want the scene to feel foreboding, not sunny. There are two other reasons why the sunlight doesn't work. First, it is not motivated. If your scene includes heavily filtered sunlight, the viewer is going to want to know why. If it doesn't relate to the story, then you've added an element of confusion. In addition the sun will move. If it takes more than a few minutes to complete the shoot, the shots won't match when it comes time to edit the scene together. With the sun gone, the room will be fairly dark. You can take advantage of additional lighting in the room, or use some of the lights you brought.
- Set up lighting. So far you've made two lighting changes: you reduced the sunlight by closing the blinds, and added additional overhead room light. The room light adds a low, warm, diffused light from above that covers the whole scene. You can turn the exposure up on the camera to compensate. Even though the actors' faces are now lit, they seem undefined, and blend too much with the wood walls in the background. Definition is created by adding and controlling shadows. You can add lighting to the actors' faces by bouncing a photoflood off a white wall that is out of frame to the right of the camera. This adds a soft, diffused light to the sides of their faces and provides some definition. To add some colour and warmth to the shot, you could also move the floor lamp into the background and turn it on.
- Last check. Now you ask the actors to walk through the shot one last time. As they move, you watch every move carefully and look for areas where the lighting can be improved further. You notice that one actor passes through a shadow as he enters the room, so you add a light in the hallway outside.
- Everything looks good. The adjusted lighting now adds just the right amount of contrast and definition to objects in the shot—it complements the composi-





tion. It also matches the other shots in the scene. Most importantly, it helps set the mood for the scene. And by doing this, it fits with the story you are telling. If you have little or no control over your subjects, you must block and set up shots as you go. When you study a location, think about how you are going to get the shots. If you can, adjust the lighting before you start. If not, and the location is fairly dark, you can try using a very diffused camera light or turning the gain up on the camcorder. In situations where you have little or no control over lighting and the subject, you have to be very creative. The pictures may not be pretty, but if they fit with the story you are telling, the shots will work.

### **Shooting.**

You've spent the time and energy to plan, block, and compose the shot. You've set the lights, and prepared the sound. Now it's finally time to start shooting. As the director, it is time for you to take charge. Before you press the red button on the camcorder, you need to let everyone know who is in control.

If you are shooting dialog and have control of the location, you should first make sure that everything is as quiet as possible: all talking and noises stop. You might need to speak up to get everyone's attention. Then, inform everyone that you are about to roll and that everyone should go to their places; you can say "stand by" or "first positions." When everyone is quiet and waiting, start the camcorder and inform the group that the camera is "rolling," or "rolling and recording." When you are ready, cue the actors to begin the shot by announcing "action." The type of shot will dictate how much direction you need to give before you start rolling. If you are shooting real life and want the shot to seem unplanned, you may not want to give any warning at all. Do whatever it takes to get the shot. It may require setting up 50 feet away from the subject and giving no direction; it may mean setting up one foot away and jabbing the subject with a stick. In either case, a director's job is to get the shot, and you go about that anyway you see fit.

### **Review Your Work**

The basic strategy for getting a shot is to shoot the scene all the way through and keep doing takes until you are satisfied with everything. Even if it seems repetitive and painfully boring to shoot the entire scene from every setup multiple times, you will be rewarded in the editing room with adequate coverage. If everything works right on the first shot, you can move on to the next one—or maybe get another take just for safety.

Therefore, to make sure a take is good, especially if it was a complicated setup, you should play it back in the camera. As you play it back, carefully examine the performance, framing, lighting, and sound. It's possible a moment you thought was brilliant was actually out of focus, or the tape jammed and nothing was recorded. If you check your work often, you might be able to catch the mistake and re-shoot the material immediately.

During production of a big-budget movie, the producers, the director, and the director of photography view dailies to make sure the shoot is on track. Dailies are a compilation of the good takes from the day's shoot. If you have time in the evening after your shoot, play back the material you took during the day. If you have a break between shooting days, do a rough edit of the pieces you shot. It is far easier to do a pick-up while you are set up for production than to have to set everything up again. A pick-up is a shot or part of a shot that you get later to repair or improve a previous bad shot.

#### 4.2 Capture and Editing

Editors select sounds and images from all the film that has been shot and arrange them to make the movie. They also plan how one shot will best transition to the next. There are dozens of possible transitions the editor can choose, each of which will create a different feeling. Editing often begins as soon as film has been shot. Early scenes are assembled for the producer and director to view. Occasionally, the actors will also view these early scenes. Many directors choose not to show actors these edited scenes for fear that they will affect the actors' performance.



The first cut of a film, called a “rough cut”, takes up to three months to complete. The final cut may take another month to finish. Sometimes the editor works alone, sometimes with the director. The sound designer and music composer join them for the final cut, adding sound effects and the musical score. When the editing is complete and the director and producer have approved the final version of the film, this final cut is sent to a negative matcher. The negative matcher makes a negative of the film that exactly matches the final cut, and the negative is then sent to a film lab where prints are created. These prints eventually end up in theatres.

In the past, editors worked with copies of negatives called “work prints” to plan a film's scenes and transitions. When an editor was satisfied with the final film, he or she would create an edit decision list, a list of each shot in the film and its length. The list would correspond to numbers, called “edge numbers,” printed on the edge of the work prints. These numbers helped a negative matcher accurately copy the work print and cut the negatives.

Today with the use of digital editing systems, the process of editing is more efficient, but for the most part, the principle is the same. The work prints, complete with edge numbers, are stored in the computer. The editor arranges the work print, and then creates an edit decision list that will be passed on to the negative matcher



## Hardware Issues

Working with video requires large amounts of hard disk, the MHz. speed of your processor as well the megabytes of RAM on board are important factors as well as the megabytes on your video card. All these factors suggest that unless you have purchased a computer in the past year, you may be short in the resources that matter when considering video capture and editing. Some of these limitations can be addressed with upgrades and the one that is most critical is the video card. A newer video card that includes video input or a TV Tuner card will have the capability to import and capture analogue video. Those that own a digital camcorder will need to have an IEEE 1394 card installed in their computer to transfer digital movie files for editing onto their PC. You must also know that video requires much disk space. An uncompressed AVI file in 320 x 240 YUV9 format by Intel with 22 kHz, 16-bit audio consumes 151 Megabytes/minute or to put it another way 6.63 minutes consumes 1 Gigabyte. Similarly, a MPEG-1 file in 320 x 240 format with 44 kHz, 16-bit, stereo consumes 25 Megabytes/minute or to put it another way about 40 minutes consumes 1 Gigabyte. Another factor to consider includes Frame Rate which determines or sets the number of frames per second (fps) for your final video. Higher frame rates, up to 30 fps, provide smoother motion, but also result in larger video files. Lower frame rates, such as 8 fps, use less data but create jerky motion. To provide a smooth sense of motion, .AVI files are often set to 15 fps.

Minimum system requirements recommended for DV and MPEG 2 capture and editing:

- Operating system. Windows 98 SE and later
- Processor. At least Pentium II 350 MHz
- Memory. 128 MB of RAM
- Hard disk. Digital Video (DV) is space hungry – taking up roughly 3.5MB for each second of film! That's 210Megs a minute – or around 12 Gigabytes an hour. So, a tiddly little 6 GB hard drive isn't going to cut the mustard – if you want to edit an hour's worth of video together, you're going to need at least 12 GB for the raw capture footage, another 12GB for the edit footage and perhaps another 12GB for temporary space – so it's no exaggeration to say that a 40GB drive is likely to be where you want to be if you really fancy dressing up your masterpieces. Thankfully, a 40GB hard drive is very cheap these days – but, be aware that it must be capable in your system of maintaining a data transfer rate of 5MB per second. UDMA 66 is a must, and UDMA 100/133 is even better, as are 7200RPM drives or faster. If you want to step up a notch, and be sure that the hard disk is going to be both big enough and fast enough, many vendors have a FireWire connected 80GB unit for sale. So it is recommended to get a three port IEEE 1394 card.

- Video cards. SVGA video card with at least 32 MB RAM. Also required for capture is a TV tuner or video analog capture card or IEEE 1394 DV camera capture card. However, given that the price of a decent Digital Video Camera is dropping almost daily, and they nearly all have IEEE 1394 output (FireWire or i-Link), it is better to dispose an IEEE 1394 interface card. There is a standard for these – OHCI is its moniker – and the better ones adhere to it. Whichever card you choose, though, go for one that has more than one socket available to you – IEEE 1394 is a much more capable standard than USB, and more and more peripherals featuring it are coming out every month. That's because IEEE 1394 is not dependent on the host processor – so, unlike USB, it won't stall if your PC is doing something heavy at the time you need to use it.

### **How to get into your PC digital video, by an example.**

Here's how you'd go about producing a short, three-clip movie, taking Microsoft's Windows Movie Maker as an example.

Step 1. Attach your DV Camera to your FireWire card and switch it on. You can check that all is OK by looking in "My Computer", where the DV Camera will be shown alongside. Open up Movie Maker.

Step 2. Click on <File> <Record> and a dialogue box will open up – here you have three choices. The most useful is the bottom one – "use default recording device" – which is your DV Cam. The top option allows you to simply record to hard disk anything and everything that's on the tape – and it even rewinds it to the beginning for you.

Step 3. Choose "record from current position". You'll note that there is a full control bar that allows you to control your DV Cam from the PC. You simply use the controls to position the tape to a point just before you want to start recording, and then click the <record> button. Movie Maker will record from there until you press <stop> (the same button) – it doesn't notice when the tape has reached the end. There's no need to worry about splitting the recording into separate clips – Movie Maker can sense when the scene changes, and will automatically split the recording into "clips" for you.

Step 4. Now that the clips are in your "library", it's time to arrange them on the storyboard in the order you want them to appear in the finished movie. Of course, they don't have to be in chronological order – and it's as well to audition each one first by dragging it from the library pane into the viewing pane. While the clip is being viewed, you can set the start

and end points, as well – useful for getting rid of any strange looking moments. If the need really arises, you can also split the clip into smaller clips

Step 5. With the clips inserted into the storyboard, you should now switch to Timeline mode and drag the start of clip 2 just slightly over the end of clip 1 – that will form a basic Transition, where clip 1 fades into clip 2 – what’s known as a dissolve in videographic terminology. The length of time the dissolve takes is governed by how far the two clips overlap – too short and your audience will become confused, too long and they’ll be even more confused. Generally, it’s best to aim for a no more than three seconds for a dissolve.



Step 6. Once you have set up all your transitions – and there’s nothing wrong with a plain cut (where one scene stops and another starts abruptly – think Top of the Pops as a TV program than uses lots and lots of very fast cuts to see what I mean) – you’re ready to “produce” your movie. That means compiling it – making all the clips, effects and other clever bits blend into one smooth, seamless finished article. Movie Maker refers to this as “saving” the movie, and it’s at this point you need to decide on exactly what quality level you’re aiming for. Since Movie Maker is aimed at online delivery mechanisms, and works in the Windows Media format, you can’t output to DV tape – you’re effectively looking at a Web page, or CD delivery. So, you must now choose what data rate you want the movie to be saved at. As a rough guide, choose the lowest data rate that your viewers are likely to be using – it it’s a Web based movie, that’s going to be a connection speed of 28.8 kbps in the average. Then, click “save” and go and put the kettle on. It can take some time to compile the movie – an hour’s worth of video will take at least 75 minutes, depending on how many clips you have, how many transitions and so on. And that’s about it.

### **Some basic principles for editing and assembling**

The film editor must know how to tell a story, be politically savvy when working with directors and studio executives, and have a calm and confident demeanour. Scenes may have been photographed poorly and performances might have been less than inspired, but a skilled and creative editor can assemble the film so that the audience will never see these imperfections. In order to do so it takes into account the following basic principles.

#### **1. Components of editing**

Cutting is naturally the easiest and most-used manner of getting from one shot to another. There is no visual effect between one shot and the next. Thus, in dominant cinema, it cannot really be, unlike those below, used where change

(location or time, for example) occurs. It is used most often where the location and scene is the same, but it requires a different camera shot. Needless to say, this device can be used in a number of contexts. Although the above is the most well-known and well-identified, it can be used in, for example, juxtaposition to achieve very different effects. Consider the use of montage, which uses the cut to achieve noticeable differences between shots.

Also the following operations are possible:

- Insert. Where a shot not in the diegetic world (that of the film) is inserted. However, due to the position at which it is inserted, it is often used to draw a connection between the inserted shot and the previous shot, in metaphor or cliché. For instance, a scene in a factory has an inserted shot of an ant colony. You can imagine the resulting connection for yourself.

The insert is used much in comedy; insert shots can allow us to see inside the mind of the protagonist - a whole new world that is funny by the association of the insert shot to the previous shot. Inserting shots do not have to be from the non-diegetic world. Quick flashbacks and recollections involve inserts, such as a painful memory that won't go away. The power of the insert shot can be very intense. Its associations can be stark and powerful. Consider the power when the insert shot is of a riot, war, or death. An awful lot can be said from these without actually speaking any dialogue. Inserts also play a role in discontinuity editing.

- Fade Out. The image fades into a single colour. This is often associated with the end of a particular scene in the narrative, where the image traditionally fades to black.
- Fade In. The opposite of a fade out. The image fades out of a single colour, and is often associated with the beginning of a scene.
- Dissolve. The mixing of one image into the next. This mixing can be of audio as well as video. Applications include mixing into fantasy sequences and dreams, and large leaps in time.
- Wipe. A physical change between two images. For instance, a line going from one side of the screen to the other pushes out the old image and introduces the new. Again, this is often used as a bridge between noticeable gaps of image or narrative. Instances include where a new location or moment in time is required to further the story. A familiar generic application of the wipe is comedy.

## 2. Continuity editing

Continuity editing is more than the cut between two shots. It is the method of providing a seamless transition from one to the other. The purpose and the effects of the cut are exclusively dramatic or psychological. As it is claimed by David Bordwell et al,

“If the scene were played on a stage and seen from a seat in the orchestra, it would have the same meaning... the changes of point of view provided by the camera would add nothing.”

These principles effectively say that continuity editing cannot really ‘disturb’ or move around the objects in the mise-en-scene, and that it operates as a provider for shots and nothing more. The narrative is not continuity editing, and continuity editing is not narrative.

As well as the cut itself, this is achieved by the following techniques:

- Similar framing. In the mise-en-scene of both shots, the objects in the frames are placed in roughly the same area of the frame. If two people are in the centre of the frame in shot A, shot B has them broadly in the same area, although the camera position may be entirely different. This helps graphic relations and eliminates possibilities of viewers’ eyes having to jump from one position of the screen to the other to keep track of the action.
- Similar setting. Graphic needs such as lighting and colour are kept similar (if not identical). If shot B is in the same scene as shot A, the idea of space and spatial relations are kept similar also.
- Similar rhythm. Long shots tend to take up more screen time than short shots. Editing is a mirror of technology, in that it was not really possible to make cuts that were transparent until sophisticated machines were available. In some respects this was a blessing in disguise, as it allowed directors to further play around with the boundaries and relations of form and content.
- Shot/reverse shot. An easy term: the reverse of a shot.

A typical example is a conversation where two people are facing each other. Cameras are placed on each person in close up. The first shot is person A asking a question. The second shot is person B answering it - the reverse shot.

Shot/reverse shot is mostly used in conjunction with the 180° rule. Once a shot and its reverse shot have occurred, it can be possible to draw a line between them - the line of the 180° rule.

- Eyeline match. Linking in again with the notions described above, eyeline match is simply where there are two shots. If, in the first shot, something is looking at something else (the subject), then the second shot tells us what is being looked at (the object). This ‘something’ is usually a character, but it could be an object such as a periscope, a gun sight, or, of course, a camera!
- Match-on action. This is where movement occurs in the frame. If a character moves around, or out of the frame, the second shot must continue this movement - the editing matches on the movement between the shots.



Although the camera position has been vertically reversed, the action continues almost unnoticed, because persons A and B have kept the same position. Imagine two people having an argument in shots like this.

### 3. Establishment of shots

Consider filming the environment around you. How would you go about it? How could you portray the whole area in a small number of shots, whilst including characters and objects? An establishing shot does this. It defines the overall space, and (often but not always) at least one principle character. Although the establishing shot does not give in-depth proportions and details to what is in the frame, it does give indications of what is there, and the spatial relations between objects. The establishing shot does not always have to be the first - it is purely the shot that defines the general area where the action, from there onwards, will take place. An establishing shot can be applied to each scene in the film, where we are required to have knowledge of the visual area and contents.

### 4. Relations of the shots

Continuity editing requires its relations to be fairly tightly defined, as listed below. In order to move away from the standards of continuity editing, these relations can be played with and used to create many other possibilities. It may be the case now that we are so used to the formal standards of continuity editing, that the rules have to be broken in mainstream cinema for the audience to remain active viewers.

Découpage is defined as being the following [Noel Burch]:

*“The spatiotemporal characteristics of the match, the relationships between screen space and off-screen space, and plastic interactions between shots...*

*the very nature of which suggests the possible forms that their dialectical organization might take.”*

- Graphic relations. Are to do with editing and mise-en-scene. The whole ‘look’ of objects in the frame tells us something about them, due to cues such as colour and size. If there is, due to editing, more than one frame, we can compare and contrast different objects in different frames. For instance, a ‘playoff’ can be achieved if two characters are in separate frames, wearing very spartan, grey or very lavish, colourful clothes. We can then be informed about such influences as lifestyle, income, class, level of self-confidence, and so on. Of course, this does not merely apply to human objects. The background can indicate as much graphic relation as the foreground and its inhabitants.
- Spatial relations. The amount of space occupied in a frame by certain objects in certain frames. One cluttered frame, full of people, which then cuts to a sparse frame containing one person can indicate isolation or claustrophobia, depending on the point of view and which frame is ‘favoured’. Consider also the angle of the camera. A ‘David and Goliath’ scenario indicates that not only does Goliath take up most of the space in his frame, but that

the camera is at a very sharp vertical angle to make him look even larger. The opposite will be true of David. Spatial relations further consist of the following two factors:

- a. The 180° rule, allowing for ease of viewer perception according to rules of spatial geometry.
  - b. Establishing shot, allowing for definition of space.
- Temporal relations. The relations of objects and narrative in time. Editing is the most important method of controlling the allocation of time in film. As graphic relations are also to do with mise-en-scene, temporal relations share themselves with another part of film - in this case, narrative. Entities in the film are allocated time according to the following mechanisms:
- a. Order The order in which shots are picked. Mainstream narratives follow a certain 1-2-3-4 trend to make them straightforward and easy to follow. This does not have to be the case. Other orders can induce jump cuts, feelings of mystery (where the viewer has to 'work' to achieve comprehension), alienation, and so on. Consider the following four shots:
    - 1 Person A opens front door of house
    - 2 Walks inside
    - 3 Walks through corridor into kitchen
    - 4 Switches kettle on.If shot 4 is first, followed by shot 1, you may think that someone is already inside the house, switching on the kettle. Thus, the order should be kept as structurally defined as possible - one shot out of place can bring down the entire piece.
  - b. Frequency. The number of times that a shot occurs. This is an excellent mechanism for building up tension. If a shot recurs over and over again, there is a feeling of increasing tension, followed by (perhaps) surprise when a new shot occurs. Frequency is also to do with temporal relations, in that a shot is allocated a certain number of 'runs' until it is succeeded.
  - c. Duration Mainstream cinema requires that more 'active' sequences have shorter shots and (thus) a greater turnover of edits. Another requirement is that once the mise-en-scene is empty or has changed, that particular shot is over. Duration does not necessarily mean that that particular scene has passed - a take could perhaps be repeated again, shot from a different angle. This could be particularly disturbing!
  - d. Rhythmic. Mainstream cinema usually calls for more active scenes to have a greater number of shots. This is rhythmic. Variations in rhythm make us expect a change in narrative action and/or setting. However, rhythm does not just depend on editing - it also calls on the narrative, context, environment and mise-en-scene to work out a suitable rhythm. The mise-en-scene can provide rhythm for itself - consider a scene of active figure movement in an inner city compared to an open field. Continuity editing also allocates differing slices of time

according to the physical depth of field. If the shot is a close-up, much less time is given to it than a long shot. In conclusion, the length of time of the shot depends on the narrative action and the shot distance.

## 5. Montage

Montage (at least in its European sense) is characterized by a particular film editing method: shots, rather than just 'edited' together, are constructed. James Monaco [James Monaco] has defined montage as having the following usages:

- "A dialectical process that creates a third meaning out of the original two meanings of the adjacent shots (editing thus has only two fundamental methods: cut and overlap)."
- "A process in which a number of short shots are woven together in order to communicate a great deal of information in a short period of time."

Montage, in this sense, operates on a more practical level in editing. It can be used, for example, to manipulate time. The jump cut, thus, is an element that can be used in montage. Shots can be repeated, manipulated, or have time expanded or contracted in them. Cross-cutting gives ability to have stories running concurrently, interweaving between each one - in real time or otherwise. You may want to think about formal meaning too.

Overall, what is produced from montage is a construction of a specific notion that the director has in mind. A particular sequence uses montage for an identifiable purpose - as with the examples just given. This notion is usually thematic, but it can produce far deeper connotations, such as the following.

## 6. Clips

If you watch much TV, you'll know that the viewpoint on any given event changes fairly often, and, in some cases, very often. Each "clip" can be very short (Top of the Pops and other "music" shows are a prime example of very short clips), and for a very good reason. A "static" shot - one in which the viewpoint doesn't change for ages and ages - can be exceedingly boring. So, when you're shooting, try to move about, move around the action and get various different views on it - you can split a continuous clip into shorter ones, and switch between them as you go, to make your movie much more interesting. If you're stuck for space, though, use the zoom facility on your DV Cam to vary the viewpoint - zoom in close on a child concentrating on a jigsaw to show only the face, maybe the tongue sticking out, and the head being scratched, then zoom out to show what he's actually doing, then zoom in on the hands as a piece is placed into position, or is offered up to see if it fits. You can then separate the three different views and use them in any order to show the action.

## 7. The 180° rule

The 180° rule is essentially this: In any scene, an imaginary line can be drawn in the centre of the filming area, which divides it into two equal parts.

You cannot change to another camera if you overstep this imaginary line. You may not have thought this to be the case before, so take a look at any film you wish in order to research the 180° rule. This rule goes hand-in-hand with the rule of perception in editing: The minimum change of camera angle in two different shots to avoid confusion is 30°.

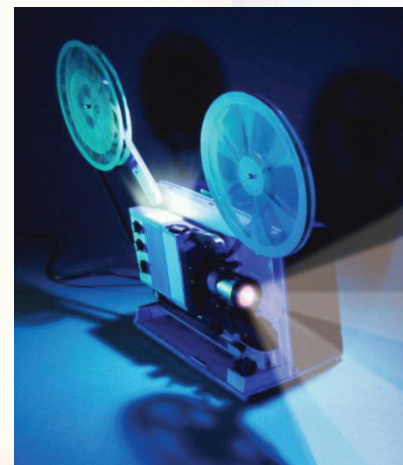
This rule guaranties the following two principles:

**Continuity.** As the topic right now is continuity, a range and rhythm of shots is defined to be continuous (unless it isn't!) In order for us to maintain a sense of space and perspective, the camera cannot be allowed to constantly throw around our ideas of such spatial use.

**Consistency.** Continuing from the above point, the change of camera must be seamless, in order to stop our ideas of the visual space from being disrupted.

## 8. Effects

Most of the video editing packages offer some very strange effects . For example, you can show a negative image of your video, colorize it to be all in tones of one colour, swirl it, spherise it, make mosaics – all sorts of stuff. Like fonts in word processing, all these effects are very nice and exciting, but they should be used in moderation, nay, even sparingly. Do bear in mind that your viewers will not have had the benefit of being there when the video was shot – they don't necessarily know what's behind the swirling mass of red mist your effects have produced, so, if you must use them, be very sparing with them! The same goes for transitions between scenes. If you have 80 clips in your hour-long video, and the package you have chosen to edit it in has 50 transition types, it doesn't mean that you have to use all 50 of them. Sometimes a straight cut will do. A few dissolves here and there, and maybe one or two wipes (old fashioned as they are) and blinds will just mix things up enough to keep the interest – but beware of long transitions between short clips – they're guaranteed to confuse. Use a cut instead.



### 4.3 Production Methodology

#### Student's Projects Production Methodology

This chapter describes the proposed Methodology of students' productions, some Design Samples and the necessary documentation about the Making procedures.

#### Methodology

Group Organization: First choices

- Each participant identify his wishes and skills
- Each participant define a level of leadership
- The whole group validate the organization choice

Group Organization: Classic Structure

- 1 or 2 leaders for the whole project (Director status)
- Three working groups with each a head-manager
  - Artistic (Concept, Bible, Scenario, Director work, Graphics, Sounds)
  - Technical (Shooting, Programming, Encoding)
  - Logistic (Planning, Equipment, Resources, Uploading)

Project Roadmap:

Several steps and many supporting documents...

- First approach (Intention Note)
- Design (Bible, Macro-Structure, Scenario and Storyboard, Scenic, Interface)
- Making (Planning, Call-Sheets, Reports, Data Files)
- Post-Production (Rushes List, Edit List, Formatted Data Files)
- Uploading (On Line Formatted Data Files+Logs)

### First approach: Intention Note

Short document giving main project characteristics

- Project Title
- Project Type (Course, Portrait, Documentary, Fiction,...)
- Project Size (Duration,...)
- Target (Everybody, students, family,...)
- Subject(s)
- Main idea
- Short Synopsis
- Specific aim(s)
- Tone (Rigorous, humorous,...)
- Production Type (Real life video, Animation video, Flash animation/with or without interaction/with or without associated hypertext track,...)

### Example: Intention Note

- Lab given specifications
- Project Title: .....
- Project Type (Course, Portrait, Documentary, Fiction,...): Fiction.
- Project Size (Duration,...): 2 minutes max
- Target (Everybody, students, family,...):.....
- Subject(s): Pollution
- Main idea: A pollution consequence could be population desocialization
- Short Synopsis : .....
- Specific aim(s) : .....
- Tone (Rigorous, humorous,...) .....
- Production Type: Animation video

**Design**

The design of the production consists of the following parts: Bible, Macro-Structure, Scenario, Storyboard, Scenic and Interface

**Bible**

- Documentation
- Location(s) description(s)
- Characters descriptions
- Other acting objects descriptions

**Macro-Structure**

- List intermediate targets to achieve
  - A, B, C, D, E
- Sort them partially
  - A should be completed before D
  - B should be completed before E
  - A should be completed before C

**Scenario**

The scenario is made of a set of small fragments (called scenes for a film) each of them describing a situation combining :

- Messages sent to the user (texts, images, sounds,...)
- Potential user action (if any)
- Self-evolution (if any)

## Storyboard

- The storyboard illustrate each shot by a canvas.  
Very useful for animation but optional for real life video except for fiction.
- California Raisins Demo

## Scenic Description

- The script describes what happens the scenic describes how to show it. Its a director work.
- Illustration : Two characters A and B have a conversation. A speaks, B listens. One scenario can describe both versions.  
*Scenic 1*: You show A speaking  
*Scenic 2*: You show B listening

## Making

The Making procedure consists of: Breakdown, Planning, Call-Sheets, Reports, Data Files

### Breakdown

- A careful analysis of the scenario allows to prepare the shooting. Its done by annotating and redlining.
- Warning : Many necessary resources are not explicitly mentioned by the script.  
*Ex 1*: If you shoot the fall from a building of an actor you will use a mannequin  
*Ex 2*: If you have a rainy weather you need a water-truck.

### Planning

- The problem is to plan the shooting days with as much resources optimization as possible (Difficult when treating live events)
- The main rule is to shoot together scenes having the same main set.

### Demo of a production tool

- Documents generated with CineMac software will be provided later for on line manual.
- The lists automatically generated by the software can be handled by hand for small projects.

### Call-Sheets

A call sheet is a document summering all the information about a shooting day.

- General Information
  - Communication
  - Transportation
  - Eating
- Shooting Information
  - What is to be shoot (Script resume)
  - Specific Tasks for technicians
- General Information
  - Production details (Film Title, Director, Staff Coordinates)
  - Production day number
  - Date
  - Day time schedule for everyone (especially Arrival, Make-Up, Ready to Shoot)
- Shooting Addresses
  - Location Map
  - Shooting Information
  - For each scene:
    - Number
    - Main and secondary set
    - Effect
    - Characters
    - Duration

- Abstract
- Any other shooting directive
- Specific Tasks for technicians:
  - Team or technician name
  - Arrival Time
  - Ready to Shoot Time
  - Directives
  - Materials

#### Reports and Data Files

At the end of the shooting the work is totally represented by two kind of documents:

- Shooting Reports: Information about all the takes (Tape identification data, good/bad status, comments, ...)
- Data Files (Rushes for a video): The films or the tapes or the computer files depending on the production technology

#### Post-production

- All post-production work has been detailed during another session.
- First work is to prepare the rushes list
- The result of the editing is an edit-list often delivered by the software or it can be established manually.

#### Uploading

- All uploading work has been detailed during another session.

**Students Projects****Case Study**

Example: Intention Note

- Project Title : A How-to Guide to “Yo-Gi-Ho! Game”
- Project Type : Course
- Project Size : About 30 to 40 minutes
- Target : Students mainly
- Subject(s) : Yo-Gi-Ho! game
- Main idea : Explaining how to play
- Short Synopsis : Yo-Gi-Ho is a new game where both players use small sets of cards (the decks) taken from a much larger set. Each card has various characteristics that have to be mastered. Numerous rules have to be learned for the play phase and the preparation of the deck itself is an important aspect of the game.

A beginner can start quickly but he will need much more effort to learn all game strategies and start to participate to tournaments. All these aspects are illustrated in the various videos of the project.

- Specific aim(s) : Understand the cards and the rules of the game
- Tone : Rigorous
- Production Type: Real life video (with optional hypertext track)

## Chapter 5

### *Implementation of the Web TV for Schools project*

#### *5.1 Implementation of the WebTV for Schools project*

##### *5.1.1 Test Run / Piloting phase – Final Run / Final phase*

The project was implemented in two phases as was originally planned; the first phase that took place from September to December 2003 served as a piloting phase while the second phase from January to May 2004 was the final run of the project. The piloting phase got both students and teachers familiarized with the project, the WebTV platform which was the main tool of this project and the pedagogical approach for the implementation and evaluation of the project. The second phase intended to provide more room for students' imagination and involvement.

During both phases the project aimed at using the video as an educational tool, which gave the opportunity to students to express themselves, show aspects of their life, learn to work in teams. Each video is the distributor of a message delivered by the students themselves with no external intervention. The students select a subject to present on video. Then they go through all stages of the production of a real video: they distribute the relevant tasks in the team; they write the scenario (Fig. 5.1a), do the necessary research on the topic, select and present the material accompanying the video. This material can be in the form of text, graphs, images and URL links. They shoot the film (Fig. 4.1b), do the montage and write the subtitles. Each production has a maximum duration of approximately 10 minutes. At the same time the project aimed at connecting students' preferred activities to the formal school curriculum. The subject of the

video can be chosen from or connected to the school curriculum. The students' enthusiasm and intrinsic motivation was increased through their active involvement in the project.



*Fig. 5.1a,b. Writing the scenario and shooting the movie*

### 5.1.2 Teacher's workshop

Teachers' training is always a very important factor when an innovative educational intervention is attempted. In the framework of the WebTV for Schools project special care was given to actively involve teachers in all stages of the projects' preparatory stages (from a technical and a pedagogical point of view) and also provide them with the necessary educational material in order to safeguard the successful implementation of the proposed didactical approach. The main training event for the teachers was the teachers' workshop.

During the 1st teachers' workshop (6-8 March 2003, University of Paris Sud, Paris, France), which was a milestone in the project's run, several aspects of the proposed framework were discussed and presented to the teachers of the participating schools (Fig.4.2a,b). These matters included a detailed approach of the technical issues involved in planning a movie, shooting and editing as well as the pedagogical issues underlying such an educational project. As far as the latter is concerned the pedagogical team of the project collected and evaluated the feedback offered by the teachers during the workshop. The pedagogical team of the project took into consideration this feedback in order to evolve the questionnaires designed for the pedagogical evaluation of the project, which are included in this guide.

The 2nd teachers' workshop (19-22 Dec 2003, University of Paris Sud, Paris, France) was made after the 1st cycle of school centered work. The feedback from the teachers was valuable in order to make the necessary changes to the WebTV for Schools platform for the 2nd cycle of school centered work (final run, January 2004 to May 2004). Also,

the teachers had the chance to discuss the problems they faced during the implementation of the project concerning the pedagogical and the technological aspect of the project.



**Fig. 5.2a,b** Teachers' workshop

## 5.2 Implementation parameters for WebTV for Schools project

Making a film in the framework of the WebTV for schools project means that the students themselves, with a side-help and guidance from their teachers, produce a film consisting of all important elements to make it attractive to their schoolmates and at the same time possessing an educative element for the creators as well as for the spectators of the film. The final aim of the project is to simulate the creation of a TV channel on the web, broadcasting over the world and having a program consisting of news, sports, films, documentaries and musical video clips created by the students and fulfilling their needs and wishes for entertainment and education. At the same time it will be a means for students to express themselves and communicate with their schoolmates from other countries.

During this process students learn to systematically examine a subject and present it by making use of the many communicative tools the audiovisual media offer. To succeed to this goal the films should be based on a specific scenario, they should be entertaining, have some form of action and definitely be of interest to the wider school community and the public since they will be uploaded on the internet (the WebTV platform) and be accessible to all. The implementation parameters should therefore respect the above mentioned principles. The plan which was used to determine the implementation parameters for the adoption of the activities of the project to the school curriculum is presented below:

**Table 5.1:** The correlation between the activities of the WebTV project and the subjects of the school curriculum for the two cases of embedded and not embedded projects.

| Project's activities                                                                                                     | School curriculum's subject                                                                                                                                                                    |                                                                                             | Remarks                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
|                                                                                                                          | Project embedded in the curriculum                                                                                                                                                             | Project not embedded in the curriculum                                                      |                                                                                           |
| Management of the project                                                                                                | -                                                                                                                                                                                              | -                                                                                           | The team work and internal management nature of the project is emphasized                 |
| Choose a theme and collect the relevant material from the internet, encyclopedias etc in the form of text, pictures, etc | <ul style="list-style-type: none"> <li>• Biology</li> <li>• Environmental Science</li> <li>• History &amp; Culture</li> <li>• Social Sciences</li> <li>• Athletics</li> <li>• Music</li> </ul> | Any theme                                                                                   |                                                                                           |
| Write the scenario                                                                                                       | Language and Literature                                                                                                                                                                        | Language and Literature                                                                     | The teacher will only guide the students to the proper use of language whenever necessary |
| Distribute the roles, prepare the scene and the shooting                                                                 | <ul style="list-style-type: none"> <li>• Language and Literature</li> <li>• Arts</li> </ul>                                                                                                    | <ul style="list-style-type: none"> <li>• Language and Literature</li> <li>• Arts</li> </ul> |                                                                                           |
| Shoot the film                                                                                                           | Technology                                                                                                                                                                                     | Technology                                                                                  |                                                                                           |
| Do the montage                                                                                                           | <ul style="list-style-type: none"> <li>• Technology and</li> <li>• Computing</li> </ul>                                                                                                        | <ul style="list-style-type: none"> <li>• Technology and</li> <li>• Computing</li> </ul>     |                                                                                           |
| Add music                                                                                                                | Music                                                                                                                                                                                          | Music                                                                                       | The music could be performed or even composed by the students themselves                  |
| Add subtitles                                                                                                            | English Language                                                                                                                                                                               | English Language                                                                            | The subtitles will be in English in all the films                                         |
| Upload the film on the WebTV platform                                                                                    | <ul style="list-style-type: none"> <li>• Technology and</li> <li>• Computing</li> </ul>                                                                                                        | <ul style="list-style-type: none"> <li>• Technology and</li> <li>• Computing</li> </ul>     | The teacher will have been specially trained to support the students                      |

It has to be noted that in the case the project is applied to a group of students outside the standard school curriculum (not in the curriculum) then it does not need specific implementation parameters to choose the theme of their film. The design and creation of the film could be implemented by following the same implementation parameters in its various stages as in the embedded in the curriculum case. In any case the aim of the WebTV project was to demonstrate that the intergration of such “informal” learning activities in the “formal” school curriculum could upgrade both the learning and teaching process so the focus of this work is based on the school curriculum work.

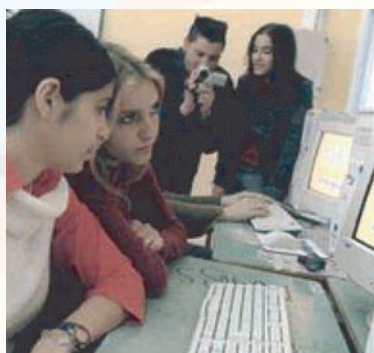


**Fig. 5.3:** *The students choose to make a film based on a scenario written by them. After all, a film is a representation of real life.*

If the project is applied to a class inside the standard school curriculum, then the thematic fields although still very broad are now limited by the taught subjects’ curriculum. The topics on which the scenario will be based could be drawn from science topics such as Biology and Environmental Science, from History and Culture, from Social Sciences or from any subject which could inspire the students to make a film.

As an example, consider the implementation of the project in an **Environmental Science** class. The chosen topic could be on water, how important it is for our lives, the water cycle and the problem of shortage of water which many countries are facing. The students will then select the scenery, for example a river or a lake, a story tell (scenario) for example an excursion of friends to the river to do rafting or another similar extreme sport and a way to connect the film action with the problem of water shortage, for example the rowing boat is stuck on shallow waters, etc. Through the film the observer will be informed and consequently develop sensitivity for the importance of water, its presence everywhere, its preciousness and immense value for the planet earth and all life forms therein. The film mainly targets the young population but it is also appropriate for the broader public. Another school could choose a different approach on the same topic which is the shortage of water problem by making a film of a visit to the National water company factory which purifies and circulates water in a big city.

Another example of an Environmental topic embedded in the school curriculum could be a film on alternative forms of energy resources in a country, such as water power stations, solar energy, wind-mills etc, a film which could be

descriptive and narrative and will inform young people and the public about such forms of energy and other related problems such as the pollution of the earth caused by traditional forms of energy etc.



**Fig. 5.4:** The students choose to make a film on sweet water and its shortage and are preparing to shoot the film on site: The scene here is the river Sperhios located in central Greece.

In other subjects of the school curriculum such as **History & Culture** there is a huge field from which the students could be inspired, ranging from visits to Archaeological sites, Museums, Historical Monuments etc. In this context the students could make an historic tour on the site and add to the video music and narrative text in order to present to the audience the historic event and the corresponding era. They could also connect it with other aspects of life, for example scenes of everyday life of that time played by the students on site etc.



**Fig. 5.5:** The students choose to make a film on the life of Ancient Athenians. They are distributing the roles and preparing to shoot the film on the Acropolis.

Similarly the students could decide to make a film on a **concert** performed by their music class or an **athletic event** organized between school teams. When filming such events it is very important to show the preparatory stages of the event, to capture the real live action, the protagonists' and the public's reactions during the event and also to show what happens after such an event, for example peoples' comments and impressions, how satisfied they were etc.

We should emphasize the **team-work** nature of the project in the sense that a clear separation and consignment of the different tasks in the preparatory stage and in film shooting and editing is necessary and should be done by the students themselves. In every task the corresponding team is represented by a student who is responsible for the best and on time delivery of the corresponding outcome. Thus, the management of the project is performed by the students themselves (internal management) with a proper guidance and help by the teacher responsible for the project.

The implementation parameters should respect the students' complete freedom to express themselves and give them equal opportunities within the group to actively participate in the design and implementation of the project, regardless of gender or ethnic origin.

### 5.3 School profiles

#### Velje Handelsskole - Denmark



Class profile: 3rd Business gymnasium class, aged 17 to 20 years, boys and girls

Computer management: The students are able to use Windows, MS Office (Word, Excel, PowerPoint), they are also totally familiar with the use of the Internet

Background on photography: They are able to shoot, develop and scan photos

Background on video: They are not taught such skills but many students are familiar with shooting videos on a personal basis and at the second year, they can choughs multi media production to there curriculum

English language: They have been taught the English language since the age of 7. They are very fluent in English

General background: In the school curriculum they are taught Danish, maths, marketing, computer science, English, German, economic, ect.

## Freiherr Vom Stein Schule - Germany



Class profile: 10th gymnasium, the last year of secondary education, ages 15 and 16, boys and girls.

Computer management: some of the students take courses in computer science; they have internet skills and are able to use MS Word and Power Point. They do not have programming skills, as this is not a subject taught in secondary school.

Background on video: Some of the students participate in a video-project and are familiar with video-making; their basic knowledge comes from their everyday experiences.

English Language: They are in the 5th year of English. Their English is not that fluent.

General background: The subjects of the curriculum are German, social science, chemistry, biology, physics, sports, art, ethic/religion, music, English, Latin, geography, history and mathematics. Computer science is an extra-curriculum activity and only a few take it.

## Ellinogermaniki Agogi - Greece



Class profile: 3rd Gymnasium class, aged 15 years, boys and girls.

Computer management: The students are able to use Windows, MS Office (word, excel, Power Point), they are also very comfortable with the use of the Internet for educational purposes.

Programming skills: They are introduced to basic programming with Pascal.

Background on photography: They are able to shoot, develop and scan photos.

Background on video: Although this is not a subject taught in the school many students have an adequate background on making video recordings.

English language: They have been taught the English language since the age of 7. Very fluent in English

General background: In the school curriculum they are taught physics, maths, chemistry, biology, history, Modern Greek, computer science, athletics, English, German) and most of them (but not all) participate in extra-curriculum activities (environmental activities, music, educational projects, cultural events etc).

### Juhani Vuorinen School - Finland



**Class profile:** An eight-grade-class of Finnish basic education, class code 8 E, students born in 1988, both boys and girls.

**Computer management:** The students are able to use Windows, MS Office (Word, Excel, and PowerPoint), they are also totally familiar with the use of the Internet and xhtml-programming (a few of them).

**Programming skills:** During the school year 2003 - 2004 the students will be having the possibility of choosing two additional courses; Pascal-programming language and multimedia (tool book).

**Background on photography:** They are able to shoot, develop and scan photos (most of them).

**Background on video:** They are not taught such skills but many students are familiar with shooting videos on a personal basis.

**English language:** They have been taught the English language since the age of 9. The knowledge of the English language is good what comes to reading comprehension, and the students are able to communicate well in spoken language. In addition to this, the students have had the opportunity to take courses in Swedish (obligatory as the second native language), German and Russian (as additional languages).

**General background:** : In the school curriculum they are taught Finnish, physics, maths, chemistry, biology, history, music, computer science, English, German, Swedish, Russian, social sciences, athletics, drama etc.

### Lycee Henri Poincare - France



**Class profile:** 15-16 year old boys and girls.

**Computer management:** The students are able to use Windows, MS Office (Word, Excel, and PowerPoint), they are also totally familiar with the use of the Internet.

**Programming skills:** -.

**Background on photography:** They are able to shoot and develop photos.

**Background on video:** They are able to produce, shoot and edit films. They are taught in their schools relevant lessons.

**English language:** They have been taught the English language since the age of 9. The knowledge of the English language is good .

**General background:** : In the school curriculum they are taught lessons about cinema and audiovisuals.

**Bundesgymnasium Schwechat - Austria**

Students' syllabus background: The class which is participating in the WebTV project is a 6th form of our institution; this means that they are aged from 16 to 17. As our institution has two main streams, they belong to the natural science stream of our school. The curriculum for natural science orientated classes provides additional physics courses as well as geometry and courses in biology and physics from the 7th form on.

The lingual syllabus includes two languages: English as the main language from the first form on and French as an additional language, taught for almost the second year.

Students' background in projects: The class already participated in the LoT project, which is still running, they also participated in a small project, the MILOS – project. They are familiar with video – conferences and communication via modern technologies such as internet.

Students' background in video taping and other multi – media technologies: The students are experienced with modern information technologies. They have had computer science lessons during the 3rd and the 5th form. Nearly 90 % of the students in this class participate to some extra lessons in computer science. Actually they don't have had any lessons in multi – media technologies so far, although they have some education in informatics and IT in general. Most of them are familiar in handling video camcorders on a personally basis. Cutting and converting videos will be an important topic in the course of the teaching of informatics during the projects run.

## 5.4 Presentation of the schools' movies

In this paragraph the student's movie productions are presented by the students themselves. These productions can be found on the CD attached to this Guide and be also viewed at <http://www.students-webtv.com/index.php>

### AUSTRIA

Movies from school BUNDESGYMNASIUM AND BUNDESREALGYMNASIUM SCHWECHAT

◆ *Hydroelectric Power*

◆ *Safety and Driving*

The video shows several important tasks and facts related to sitting position, seat belts, street traffic, such as breaking distance, correlated to speed, driving and breaking on slippery conditions, a.s.o. The education center of the au...



### Hydropower in Austria

**Theme: Hydro-Powerstation**

**Participants:** Jürgen Wurzenberger, Rene Feichtinger, Judmann Thomas, Alexander Dergovics, Roland Pechter, Daniela Hubatka, Karina Czerny, Conny Beyer, Eva Pfisterer, Reiner Dietrich, Daniel Nesterwal, Nicole Schulitz, Nicole Büchl, Maria Tükör, Peter Ban, Pham Hao-Tri, Richard Maria, Philipp Patek and our teacher Markus Artner

We choosed to tape a video about this topic, because it was important for us, to tell the other countries how important the hydro-power is for our country and that we have to develope more hydro-powerstations to use the natural resources. In Austria we have to get the electricity from hydro-powerstations because in our country we have got plenty of strong rivers with steep inclines that's the reason why the main part of electrcity in Austria still comes from hydro-powerstations. That's the main reason why we choosed this topic and we hope you will enjoy our presentation we worked very hard but we also had a lot of fun. Personally we think that we did a good job and we liked watching our video.

### Working Method

In our research for the Autrian project, we used the Internet and the library to find sources, but we also used some folders of Freudenuau.

In our research for the project Web-TV we first heard very much about hydro power stations in the physics lesson. When we knew the most important information about power stations, we made an excursion to Freudenuau. There we listened to a speech and filmed everything. Back in school we looked for the missing information in the library and in the internet. It was hard to find information which we could use.

### **Storyboard**

As the whole class we decided what we wanted to film and in which order the single scenes should come. Then we split into groups of three or four pupils and talked about the details of the single scenes. After we'd finished the storyboard, the class went with video/photo cameras to Freudenuau and captured the necessary places and sights. Back at school we further had to research on the internet for more detailed information about this power plant. Finally, a group realized the whole film on a computer by combining the record material and the additional info. Here is the script of our film.

### **Report Writing**

First we decided to split our big group into smaller ones. We chose this because we thought it would be better to work in groups of two. Everybody had his own part which he/she had to work on, so we had a video-group, a source seek-group and an interview-group.

Because of the small groups it was easy to split the film for the people, so that everybody knew which part he/she had to write about. We had a few problems with the time, because not everybody did his part very well. But all in all, we were a good group with working mind.

### **Editing**

The program which was used for our project was "Ulead Media Studio 7". The clips of the cameras had been imported through "DV gate" before. Many scenes, which weren't important, were shortened. In contrast, the depicted experiments were shot in school and added to the film.

The video editing was done by some guys who have a great knowledge about computers. Still the whole class was involved because they had to create the accompanying texts.

It was real fun to create this film because everybody had learned very much by facing other students' opinion.

## DENMARK

### Movies from school VEJLE HANDELSSKOLE

#### ◆ *BONUS wind energy*

This video shows the BONUS company. BONUS is a company who produces wind mills for sale and use in Denmark and worldwide export....

#### ◆ *ELSAM energy production*

This video shows energy production by ELSAM. ELSAM is a big danish powerplant, who produces electricity by means of coal....

#### ◆ *Danish School Culture*

This video production describes and shows everyday life of the students attending Vejle Handelsskole/Vejle Business College. Furthermore it tells about the education possibilities offered by the college....

#### ◆ *Culture and integration in Denmark*

This video is about culture and integration in Denmark. The view is mainly from an outside angle, as it is seen by three second generation immigrant students and one danish student....

#### ◆ *Culture & sights in Denmark*

This video shows different aspects of danish culture, nature, environment and government. It gives you an overalle view of what is characteristic of Denmark. ...

**Danish School Culture****Guilty Parties** – Thomas Grønning, Simon Fischel, Christoffer Flø & Søren Maibom**The projects progress**

We are now going to describe how our group handle this project. We chose our subject based on the different contacts we could use for our report. We had some contact in LEGO. This might seem irrelevant but we learned that LEGO had an area, which is called LED – Logo Educational Division. This area deals with the whole educational area in logo which were highly relevant for our report.

Therefore we have interviewed a number of people. For example, Jørgen Møller, who gave us a lot of input on how our school works. We made this interview because we needed to get behind the “scenes”. Learn about the schools teachers’ opinions regarding facilities and social circumstances.

The project also required a film production, a thing we all looked forward to produce. We had decided that we would save the film production for the last two weeks before deadline so we could concentrate on making the report. The film ended in success which were pleasing after two weeks hard work.

**Group development**

The group selection happened quite simple, because it only took us few minutes to find that we would like to work together. After choosing a subject we sat down and talk about what we would like to achieve with this project. We all signed a group contract where we agreed to work very hard, because we wanted to make an excellent rapport and

good/funny movie that could “catch” people around the world and of course end up with a good grade. We also made a schedule, which we thought were necessary if we wanted to have a general overview. Although all this planning took some time, it was necessary and I think we were the only group who made all these preparations. Even though we’ve made all these preparations the group did not always work perfectly together and we had some big conflicts in the group because not all of us worked as hard as the others. To solve the problems we had a group meeting where we talked everything through and came up with some basic rules and solutions. After the group meeting the group functioned almost perfectly and we ended up with a solid rapport and a serious, but funny and “catchy” film.



## Danish culture

**Theme:** Danish culture

**Participants:** Catrine Mortensen, Ditte Aarestrup, Dorte Thomsen, Nadia Bang, Henrik Bøgild, Ditte Petersen and Andreas Schnoor.



We chose to write about this theme, because it was important for us, to tell the other countries that are participating in this project, about Denmark and the Danish culture.

## Working method

### Research

In our research for the project Web-TV, we used the Internet and the library to find sources. We were very critical towards the sources we found on the Internet, and we had to sort a lot of them out, as we would risk getting too much material.

**Interview with Jørgen Møller, subject adviser.**

We arranged a meeting with Jørgen Møller who was a part of the project. Before the interview took place we had prepared some questions for him so that we knew what to say and so that we were prepared to make a good interview. These questions were a very big help for us also so that we did not forget to ask him about any important question. The interview took place a day after school, but we made the interview on the school in a classroom. During the interview we also talked about other relevant topics about Vejle Commercial School and about the difference between a commercial school and a normal upper secondary school.

It was a great interview and it helped us also to see our subject from an other point of view.

**Report writing**

Right from the start we chose to split the group into three smaller groups with two persons. Afterwards we also split the report, so each small group wrote a chosen part of the report. The reason why we chose to do this was because we thought it would be very difficult if six people were to write about the same topic at the same time.

During the progress we made some deadlines, which most of the time were kept, but a few times it was necessary for us to change the deadlines, mostly because we did not have enough information or time.

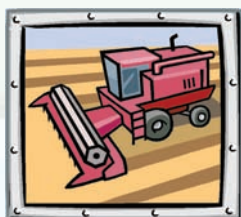
**How to make the movie****Storyboard and shooting:**

First we started with a storyboard. The storyboard was our recipe for how to make the movie. We sat down and talked about what kind of a story we would like to tell. Our story had to enlighten other students from Europe about how things are done in Denmark. So we talked about different sets, where we could shoot the movie. It could be farms, forests, bridges etc. When we had found the sets for our movie, we included them in our storyboard together with a little text that would tell something about what will happen in this particular scene. It looked like this:

**The storyboard:**

**Camera: *Close up on the hill – Then zoom out***

- *to get the whole picture.*
- *5 seconds shooting – then move over to the next picture.*
- *Cut.*



Camera: ***Follow the harvester***

- 10 seconds shooting – the farmer comes into the picture.
- Zoom in on the farmer.
- Cut.

### Editing:

We used a film-editing software called „Studio 8“. We linked our digital-camera to the computer and uploaded our clips. We had almost half an hour of film stock. We chose the clips that we thought were important and began editing them. First we edited the length of the clips in the movie. Then we made a voiceover, where one member of our group spoke in to a microphone, which recorded the speak. And now we had a movie with speak, but we needed some background music. So we spiced the movie with some music from the movie Titanic. And the music made the movie come alive. Then we had our movie for you to enjoy!

Our teamwork has worked very well, but we had to accept that we were a large group. We shared the work, so we did not have so many problems. Everyone took part in the work, and all the stuff was finished in due time.

### Technical development

There were not a lot of big problems when we were making the report. The biggest problem was to make the movie, because we had not tried anything like that before. And because of that, we needed a lot of help, but the help wasn't there, because there were also a lot of other groups which also needed this kind of help. We had problems with the sound and the colours in the movie.

But despite the problems we learned a lot about teamwork, because we were left by us selves without much help.

### Personal development

The most interesting part of making this project was to make the movie about the Danish culture and to see the finished result. We experienced that it was difficult to work 6 persons in a group, because we are 6 different people with 6 different opinions, so therefore we worked in smaller groups of 2 persons in each. Besides that, we split the questions to each group, and answered them.

That helped us through the discrepancy, which aroused in the work. If we didn't do it that way, we wouldn't be able to finish the project at all.

So a good advice would be to have a small group, so you avoid the irritating and impossible problems which turn up in the group.



### **Culture and Integration in Denmark**

#### **Introduction:**

Our subject was: country culture from a foreign point of view. And the group consist of Enisa Malicevic, Fatima Resovic, Murisa Dzanic and Camilla Dahlgaard Jørgensen.



The subject was selected after some choices our teacher Ruben Krogh gave us. We chose the subject: country culture from a foreign point of view. The main reason to that selection was that 3 of the 4 members in the group have foreign background.

#### **Work progress:**

The project was made as a 1. year exam project. We got a certain amount of time to make both the report and the movie.

We started out with finding out, what we would like to write about. Then we started the research progress. We went down to the library and borrowed some books about Denmark. Then we divided the subjects between us, and started writing. We made some deadlines, so we wouldn't get too far behind.

Every morning we (the group) started out with a meeting. The meeting were to keep up, with what each other were doing, to see how far we were, and ask each other for help and backup, if we had problems.

Because we chose to write about country culture with a foreign point of view, we chose to visit the municipality and to make a movie interview with Lisa Fischel, who works with integration.

We also visited a kindergarten, where we filmed the children, Danish and foreign children together.

### **Professional comments:**

Like any other group we had some problems, which we have learned from. For example we didn't keep our deadlines, and kept pushing them.

We started too late on our movie. And the day we wanted to edit it, the person who were supposed to help us, didn't turn up. So at the end, we became a bit stressed.

We've also learned that the 4 of us have a great team-work, but like most others, we can get on each others nerves. We learned that it is okay to work separately, but that we have to keep each other up-to-date.

We all learned something new during the progress, and we developed professional.

### **Personal comments**

During our interview with Lisa Fischel, we made a mistake. Lisa is originally from USA. The interview was supposed to be on English, but we forgot that, and made it on Danish. We did not think about it, and we could have saved so much time. That is a funny and really silly thing to do.

But at the end of the project, we made a excellent work.

### **Our advice to others:**

- We started out by making a contract. A contract on how we would work together.
- Then we worked together, but separately.

- To make deadlines, and to keep them.
- Be able to co-operate.



### ELSAM Energy Production



#### Working methods

##### Research:

Every report starts with a feral research, as did this assignment. We started our research searching and looking through magazines and papers, when we stumbled over the company Elsam, after reading several articles it became very clear, that there were bases for a good assignment. So we called up the office of the company, after visiting to the company's website, which stated the phone number and address. The press secretary was assigned to help, who we owe humongous gratitude, because of his strong support throughout the entire project.

##### Visiting the company:

After a months dialogue, we scheduled a visit with the press secretary. This resulted in an entire day at the power plant, with a questioning round, a guided tour, lunch all this ended on his office where we sat down and asked more questions.

### **Video recordings, editing, music and speak (voiceover):**

We received several digitally recorded pieces from the plant, besides these recordings we spent an entire day recording footage at the plant. The editing was easily made, because of our planning in the recording process. We used music from a state library and as the film shows we didn't use any speak this unfortunately has a impact on the understanding, but due to the time limits we didn't made it.

### **The writing of the report:**

The assignment was divided into three equally big parts and into three different areas, which was done in order to each of our specialities. This also made the representation of the entire project much easier in the end.



### **Bonus Wind Turbines**

Anne & Joy ( Mark and Morten, who are not in our class any longer)



At first we wanted to have the subject: Danish school culture. But because my (Anne) dad is working at Bonus, Bonus wasn't the subject. At first the subject was Nordex – another big wind turbine consumer in Denmark, but it would be easier for us to get information and knowledge through my dad, and further on we discovered it was an interesting subject.

We started out after our first meeting, where we decided to meet every day, finding information on the Internet – especially on Bonus' homepage.

But quickly we got an appointment with Bonus; we prepared us by making a questionnaire – which we send to Bonus so they also were prepared. We were lucky to be allowed to get into Bonus, to see what they were doing and so on, but there were some parts of the firm, we weren't allowed to. We only got to visit the firm because of my dad. After the tour inside Bonus, we had a meeting with an employee, who would answer our questions – but it was not a big help, because she wasn't allowed to answer many of our questions.

So mostly our information we got through the internet, wind turbine magazines and materials we were handed out at our visit at Bonus.

Our recording didn't went as well, because we didn't got the right instructions, so we started over and over again, because we didn't saved it the right way, but finally at the exam Joy and I thought we were finish, but there were no sound at all – it was Mark who had had the final touch.

But now it is finish with both music and voiceover, and the result is quite fine.

The writing went well, we split up, and got each a subject, and it went quit well.

We started out as a group of 4 but have recently had been increased to 2 persons, because of a couple of problems with some of the members. The co-operation between us was good. We all accomplished the tasks which were issued to each member. We did not have specific problems concerning our team work, but had some problems during our movie-making period.

The movie-making period was problematically because we did not get the help which we needed to make the movie because we, at that time did not have lessons about how to make a movie. The most problematically part was that the movie was deleted by the computer 3 or 4 times, because it was not saved in the correctly format. We had to start from the bottom several times which resulted in that the movie was not completed before second year on business school 2003.

The whole process was a worth-while and exciting experience. A change in the ordinary days and having contact to other countries made us choose to make a Web-TV project. The most exciting event during the process, was to visit the company and to see in real life, how Bonus A/S manage to build wind turbines.

At first Bonus sounded as a boring subject, but it was very interesting subjects, and we learned a lot.

NB! If you are going to make a film, editing and all that – then know how to us it before starting!

## FINLAND

Movies from school JUHANI VUORINEN KOULU

- ◆ *Christmas in Finland*

Christmas video.....

- ◆ *Korpelan voima (waterpower)*

- ◆ *To swim in Ice*

- ◆ *Sledge Ride Siperianhusky*

Sledge Ride Siperianhusky in Eskola (Kannus)...

- ◆ *The finnish language*



### The Moose Hunting

The moose hunting season in Finland begins the 1st of October and ends the last of January. During this three month period about 84 000 moose lose their lives throughout the whole country.

In Finland the local hunting clubs arrange the hunts. If you own land, you almost automatically have the hunting right. If you don't want to use it yourself, you can sell your right to the local hunting club and get money or moose meat for it. All in all, you are allowed to hunt moose if you are a member of a hunting club and have a personal hunting permit. The local hunting clubs get 70 000 licences per year, and with one licence you can shoot one adult moose or two calves.

To hunt a moose you need in general persons and trained dogs that flush the moose towards the shooters, usually small wooden towers from which to shoot the animal, tractors, cars and trailers to transport the animal with, and a location (usually a special club house) where to cut and storage the meat.

The meat is considered a delicacy in Finland, but moose are not being hunted just for the meat. The animals make damage on farmers' fields and cause severe accidents on the roads when people hit them with their cars. The moose normally do not recognise a fast moving car and enter the road. The result is often lost lives both for the moose and for the people. Colliding with a moose and losing your life is a more common cause of death than driving too fast and losing your life in a road accident. Drivers are warned for the moose by placing triangle shaped traffic signs with speed limitations to places where the local people know that the moose traditionally have their routes.

The most dangerous periods when you have the risk of colliding with a moose are spring and autumn and specifically the sunrise and the sunset.



### Dog Training

Dog-training as a profession is popular today. In Finland the possibilities to multifaced training are brilliant and I want to mention for example Kannus's own Countryacademy (called Maaseutuakatemia: [http://www.kpedu.fi/Default\\_uusi.asp?TUNNUS=MAK\\_KANNUS](http://www.kpedu.fi/Default_uusi.asp?TUNNUS=MAK_KANNUS)), where I try to get to study after comprehensive school. Education takes about four years and it contains high school.

Training a dog is hard and it takes patience and common sense. The best result you get, if you and your dog share a connection which contains love, friendship, trust and respect towards each other. If you are insecure with your dog, the dog feels the situation unpleasant and feels threaten, because it doesn't know what you have in your mind.

Training might take years and it takes very much nerves. You won't learn anything in an instant and you have to work very much. Whatever the result is you have to be satisfied with the work and the work has to be fun.

Dog is a man's best friend.



### A Class Trip

In Finland there has been a tradition of going to a shared classtrip in the last year of comprehensive school.

This year two 9th grade classes from our school are going to a classtrip. Almost every student from our class is going to Helsinki, our capital. We'll be staying for three days.

We've been collecting money for three years with different rummage sales, and every student has also given a certain amount of money every month.

We're going to visit for example the parliament building, museum of modern art and the candy factory of Fazer's. We could choose the destination of our journey ourselves, and we are waiting for the day we're leaving with excitement.

Seven students from our school made a trip for a week to Russia. This was part of a student exchange between Kannus and it's so called friendly town Uzjustna from Russia. There were five students from our class in this trip. They lived with Russian families at their home and went to a local school during this week. Next semester there will be Russian students in our school Kannus.

## FRANCE

Movies from school Lycée Henri Poincaré

◆ *essai*

◆ *The gesture*

To smoke kills !...

◆ *Dark Potter*

One short movie about a very strange monument of our highschool !...

◆ *Our class of audiovisual*

Scripting, editing... All the students participated! We are going to propose you a small game !!!

Recognize films presented in our videoclip Goodbye on the website !!!...

◆ *The bicentenary of the secondary school henri Poincaré*

The Bicentenary of our school 1804-2004... One week of spectacles, exhibitions offered to the public.....



### Fiction mini-films

How to make a movie that is relating a story only using static shots?

This was our first approach to video creation. Although we knew nothing about movie creation we came along with fiction scenario writing, we worked on the images' frames and we learned how to edit sound image.

### Documentary mini-films

On the 27th of March, our high school celebrated its bicentenary year (1804-2004). Concerts took place in Nancy's churches and at the high school; a video installation has been

set up and by the pupils of the plastic arts section at the chapel crypt of the high school, shows have been organized in the classes and the corridors of the school, a theatrical play has been presented... We have tackled mini-films creation with a documentary aspect: these films gave birth to a DVD.



### Working method

#### *Scenario writing and story board:*

#### **Fiction mini-films**

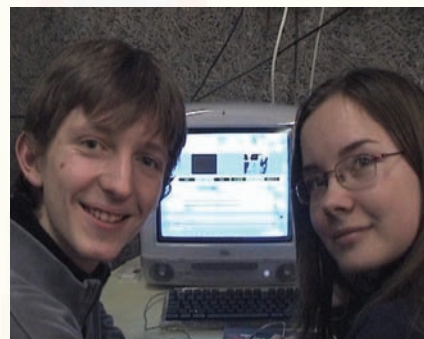
The students split up into small groups of two or three students and started looking for a story like a “picture-book of a film”.

There were two constraints that we had to deal with: the shooting area as the shooting had to take place in the school and time as the film had to last two minutes the maximum.

A movie scenario is not written like a book so the task was pretty difficult. The youngsters spent time making the characters, writing the dialogues, preparing the scenes in the cinematographic language: always in the present, never in the past or the future...

A character was thinking of holidays besides the sea; in the scenario there should be two scenes: the first scene shows the present when the character is thinking and the next scene shows a flashback of the past that the character thinks of

at the place where the actions are described. Each and every group has checked out the shooting places and then they have filled in a storyboard that included information about the position, the camera movement, the timing etc.



### **Documentary mini-films**

The process have been totally different: the pupils have taken the bicentenary activities complete program : they've chosen the themes of the concerts and showings that was close to a video shooting: there is no real scenario writing, if is not for the DVD.

### **The shooting:**

#### **Fiction mini-films**

We have spent much time working on the image frame: the composition, the distribution of the lines of force, the respective place of the characters, their height, the direction of the looks that was really important issues to preview for the shot/reverse shot editing...

### **Documentary mini-films**

We have started learning how to shoot using two cameras. We needed to shoot with two cameras especially the concerts and the shows. A static camera to assure the shooting in establishing shots and the sound take and another, called "flying cam" that allows the creation of close-ups that will be integrated on the editing time to the established

shot. For the shooting of the video installation in the crypt, one student mingled discreetly with the big crowd with a miniDV cam on the shoulder privileging disconcerting framings...

**Editing:**

The pupils have worked on Mac and PC editing stations. With Adobe Premiere on PC and movie on Mac. There were four editing stations so all the students had the ability to work the sound editing and the image editing.

**Fiction mini-films**

The pupils have adjusted the timing of each and every image just like a cartoon, because every was originally a static image established on the shooting. They have then created a soundtrack (dialogues and/or sound effects and/or music) that they have integrated in the image editing.

**Documentary mini-films**

The editing of the video installation of the crypt had privileged the walk trough the paintings of the crypt and the ambient sound of the installations. For the editing of the concert, after putting the rushes from the static camera (a single shot) on the soundtrack n°1 and video n°1, the youngsters have taken the close-ups (image) from the “flying cam” and precisely edited them on the soundtrack n°1. The adjustment of the sounds and images is long and tedious but the result is very professional!

## GERMANY

Movies from school FREIHERR VOM STEIN SCHULE FVS

◆ *The Beginning*

Scenario of grade 5 and interviews...

◆ *The School*

Students move into the school playing football. ...

◆ *The location: Frankfurt*

The video shows an overview of Frankfurt, its culturell and other remarkeble places like theaters and stadions, skyscrapers and people....

### The Background of the German Production

#### Details on the activities

The class 10c of the FvS choose to work on the topic “A school career in Germany illustrated at the example of the FvS”. The topic of the production has been selected with the absolute agreement of all involved participants.

The completely new learning process proposed by the pedagogical approach of the project turned out to be a real challenge.

For the realization of the production prior knowledge, at a certain level, was required on:

- the operation of digital cameras,
- the provision of storyboards for the videos,
- the testing of the camera guidance and the tone admission,
- the production of an interview script,
- interview techniques,

- capturing and editing videos and
- translation in English.

The class was divided into different teams and made one production per team. A “Specialists’ Team” undertook the processing of the videos.

In some cases it was necessary to repeat the shooting several times. Thus, there was enough material to be used during the processing of the productions that ensured the quality of the production.

The dubbing of the videos proved to be quite difficult since, so far, only little experience within this field existed. The recorded texts differed in volume and sound quality and had to be recorded several times as well.

The contacts that were established to the interviewed classes turned out to be positive in every way. Together we intended to recollect our situation and to define our position.

We made hard efforts for the productions “The school” and “The Location” but on the other hand we had lots of fun.

### **Troubles during the implementation and troubleshooting**

Our problems started during our first attempts to upload the videos into the WebTV Platform. We faced the same problems that the other schools did since at the beginning nothing seemed to be working for us.

The platform would not accept our videos although they were in rm-format. After many further inquiries we found out that some of our windows were arranged as pop-ups. That information was helpful to proceed.

We then used the software “Helix Producer” to compress the files of the videos and the “Specialists’ Team” uploaded the productions at the Platform.

Unfortunately, so far, we have been unsuccessful to upload all our productions but we are still trying hard.

Another problem that we had was to participate in the on-line meeting of the WebTV teams. We hope that the problem will be soon resolved.

We stress the fact that we were supported by the experts participating in the project but there was no personnel or students with such previous experience in our school.

### **The interests of the students, changes in attitudes and motivation**

We took under consideration the students' interests in order to address them with our productions.

The students were able to communicate via the chat board of the platform. They expressed their interest in actually meeting with their virtual classmate to discuss on productions.

The work with the Smartboard, the camera and the PC has motivated us to improve our videos and to deal more with the needs of the younger pupils. We enjoyed the project and would like to continue this kind of activities. Teachers supported us with the project and we both believe that we have learned a lot from the project.

Unfortunately this does not continue always in this way. The school often returns to its typical pace. In any case we have the willingness to make more video productions, to gain knowledge on the uses of various technological tools and to change the school into a more pleasant environment for both students and teachers.

We have also realised that we have to endue parts of our own personalities in the productions to be successful. The cooperation between the various teams was a challenging task and we have learnt that only through collaborative work we can achieve good results.

## GREECE

Movies from school ELLINOGERMANIKI AGOGI

◆ *Acidification of Milk*

Milk is sterile at secretion in the udder but is contaminated by bacteria even before it leaves the udder. The bacteria at this point are harmless and few in number. Further infection of the milk by microorganisms can take place during mil...

◆ *Christmas Fair*

The Christmas Fair is one of the most important Cultural Events of our School. The program of the Event includes theatrical and music performances by the school students of all grades, a grand bazaar and happenings. Students, teachers an...

◆ *The Great Asklepieia*

The production presents athletic competitions and a theatrical play....

◆ *Energy: "Solar Energy"*



## CHRISTMAS FAIR

### Introduction

A Christmas Fair is held every year in our school. This is a long tradition and an event which students, teachers, staff and parents are looking forward to. The aim of the Fair is to raise funds for charity.

As the Christmas Fair is a major event of the school year the WebTV camera was there!

The students, the parents and the school teaching and administrative staff are preparing the Fair months before it is held. The Program includes theatrical and musical performances of all grades, exhibitions, stands of the various departments of the school and a bazaar. Most of the "goodies"



sold during the bazaar are hand-made or traditional/natural products. The duration of the Fair is two days and many people are visiting the school.

The whole organization is based on voluntarily work of the school community members and the fact that the funds raised are used for a good purpose is a very strong motivation.

### **Work Progress**

A couple of weeks before the shooting, we were divided in three groups.

The first team, of six students, was responsible to check the technical details, such as lights, noise etc, before the shooting at the Fair venue, which was the school-building in Pallini, where the high school is lodged.

The second team, of three students, was responsible for the shooting and the interviews. One students undertook the role of the cameraman and the other two of the reporters.

The third team, of four persons, was responsible for editing the video and their work started after the shooting. They processed the video at the schools' PC Lab.

All students wanted to act as reporters and this has been a problem for the Director and the teacher that distributed the roles.

The duration of the shooting was approximately two hours. It was very enjoyable experiences as everybody were all very enthusiastic about sharing with us a few words on the Fair.

### **Some comments**

The most exciting aspect of this production was the interviews that showed how the Christmas spirit influences the behaviour of the members of the school-community.

The editing of the film was a really difficult task! We could not decide which scenes to cut to make a shorter video that would be appropriate for the platform.

Another huge problem, which we unfortunately realized after the shooting during the editing, was that due to our anxiety to shoot the film we did not paid that much of attention during the scenario writing.

The film was very spontaneous, which we consider positive, but the quality of the video recording was not that good, as you have probably noticed, and we think that the reason was that the cameraman had to follow the reporters that were moving around without following a specific script, given that the cameraman was not a professional!

The procedure has been very entertaining! We had the opportunity to work together with our classmates, to explore our talents, to resolve problems...

We became very popular in the school and now everybody wants to participate in our future productions!



## THE EXPERIMENT

Biology is a very interesting and fascinating subject. We learn how our body and the nature operate. One of the subjects of the course was “Bacteria”. The idea for shooting an experiment on “Bacteria” came up after some lectures given by our teacher. We thought that such an experiment would be interested even for students that do not like biology that much.

### Working Method

We were divided in four groups. The first group, of five students, was responsible for the collection of information relevant to the experiment. The main resources of the group were the Internet, books from the school-library and the school-book. After having completed the collection of the material the group made a presentation to the other groups.

The second group, of five students, based on the results of the work of the first group, wrote the scenario of the experiment in every possible detail. The title that was given was “Acidification of Milk” and the aim was to show the growth and the influence of some pathogenic bacteria in the milk.

The third group, of two students, shot the film. The shooting took them almost two days. It was an easy task as the scene was static.

The fourth group, of three students, undertook the editing which again was a relatively easy task. There were just a few scenes that was not of importance that were cut.

### Some comments

The most important and time consuming part of the production was the organization of the experiment in terms of the sequence of the actions and the necessary materials to conduct the experiment.

The production gave us a reason to learn more on the “Bacteria” because we had to make the film.



## THE ASKLEPIEIA GAMES

### Introduction

Our school participated in the national project “Ancient Asclepieia” within the framework of Olympic Education. The idea of the project was to engage students from a network of primary and secondary schools in activities based upon the Olympic Ideal.

The students were preparing the activities and finally experienced the “Great Asklepieia Games” during a three-day event that included:

- Theatrical contents on drama
- Athletic contests on five sports (disc-throwing, jumping, running, wrestling and pagratio)
- Contest on “rhetorical contradiction” (Agones Antilogias)
- Torch-racing (800 m.)
- Musical and Art Events
- Open-day Event.



### **Sacred Pan-Hellenic Games**

Initially all the games were dedicated to eminent persons who had died and later on to the gods. They were local events called ‘Perihoroi’. Some of these games, however, acquired a Pan-Hellenic importance and were called the Sacred Pan-Hellenic Games. These were the Olympic, Pythian, the Isthmian, the Asklepieia, the Nemean, Thermopylae (from 480 B.C.) and the Eleftheria Games (in Platai from 479 B.C.). The first four of these were the most important. They were dedicated to the gods and the dead. All free Greeks had the right to participate. The prize for the victors in Olympia was the wreath of wild olive branches, in the Isthmian Games it was a crown of pine branch, in the Nemean Games a crown of celery leaves and in the Pythian Games a wreath of laurel leaves. The winners of games enjoyed exceptional honours. Those who won in all four Pan-Hellenic Games, were victors of a ‘period’ and called the ‘Periodonikai’. The first description of the Olympic Games is dated 776 B.C. The Pythian and the Isthmian games started in 582 B.C., the Nemean Games in 573 B.C. The Pan-Hellenic competitions held during the celebration of the Panathenian Games were in honour of the goddess Athena.

The Great or ‘Epifanestata’ Asklepieia, were dedicated to Asklepios, held every four years (usually 9 days after the Isthmian Games), at the Sanctuary of Asklepios at Ancient Epidauros. In addition to athletic feats during the Asklepieia poetry and music contests also took place.

### **Music, Dance & Poetry Competitions**

Information about cultural competitions in ancient Greece is provided through the works of art. These depict the prizes of the games and the crowning of the victors by the goddess ‘Nike’ (victory) personified. Written accounts also provide much information about the music, dance and poetry competitions held either in honour of a god for reasons of reli-

gious worship, or as part of the funeral rites in honour of an eminent person. Music competitions were held in the Isthmian and the Nemean games, and also in honour of Artemis (the Vravronian and Artemisian competitions), of Apollo (the Thargeleian and Karnean competitions), of Dionysus (the Anthesterian Competitions), of Demeter (the Eleusian Competitions) and of Hera (the Heraian Competitions). The most famous music, dance and poetry competitions were held in Isthmos and Nemea, Delos, Athens and Delphi.

### **Drama and Art Competitions**

The most important drama competitions were held separately from the athletic organizations, as in the case of the Dionysian competitions held in Athens and the Lynean competitions. Often, however, drama competitions were held concurrently with the athletic competitions. At the Pythian Games, the music competitions were held with the athletic events, followed by competitions in comedy and then tragedy. In the Isthmian Games, apart from the gymnastic and equestrian events, poetry and drama competitions were held in which women were allowed to compete.

Poetry and drama competitions were held in the Neamean Games. In the Neamean Games of Dodoni drama competitions were held in the beautiful theatre of the sanctuary. Drama and athletic competitions co-existed in the Great Amphiarian Games of Oropos from the first century B.C. onwards. In 440 B.C. according to accounts, art competitions were probably held in the Isthmian Games and the Pythian Games of Delphi.

### **Method**

The students of the WebTV Team were engaged in the activities of the project. This means that the “scenario” was pretty much predefined. The shooting of the video was made by a professional so we actually started working within the framework of the WebTV after the capturing and the editing phase.

First, we had a meeting in order to decide which of the moments of the video (the video was covering the three-day event) we would include in the WebTV production. We decided to cut off speeches that would not be of interest to our virtual classmates and focus on the athletic and drama contests. The editing of the video was a time-consuming process. We uploaded the production following the standard procedure. Currently the “subtitling team” is working on the subtitles to be added.

### **Some comments**

We found the idea of linking the activities of the Asclepieia project with the WebTV project very challenging.

The theme of our production stimulated an interesting discussion with our Austrian and Finish schoolmates at the chat board of the project on the Games of the antiquity and the Olympic Games that will be held in Athens in August 2004.

We had the opportunity to invite our schoolmates to visit Athens for the Games!!!



## SOLAR ENERGY

### Introduction

This production was made within the framework of the International Joint Production on Renewable Energy.

We live in a sunny country and we use solar energy quite a lot in our daily lives (for example: solar-heater) so we decided to work on solar energy.

### Method

We searched for information and data. Our teacher suggested organising a visit at the Thermal Engineering Section of the School of Chemical - Mechanical Engineering of the National Technical University of Athens (NTUA).

He also suggested that we interview Professor Jiannis Palivos, who is considered to be an expert in the field, to receive valid information and scientific explanations to all our wonders.

Our teachers Mr. Jiannis Stavrakis and Mr. Vassilis Toliass very kindly cooperated with us and offered to contact the NTUA and make the necessary arrangements for our visit.

We prepared the scenario of the visit, the “shooting team” got ready and we went to the NTUA.



First we observed the building that was made off solar panels. Solar panels are devices that convert light into electricity. They are called “solar” panels because most of the time, the most powerful source of light available is the Sun, called Sol by astronomers. Some scientists call them photovoltaics which means, basically, “light-electricity.”

*Figure from NASA's Jet Propulsion Laboratory Deep Space One Web Site: <http://nmp.jpl.nasa.gov/ds1/>*

A solar panel is a collection of solar cells. Lots of small solar cells spread over a large area can work together to provide enough power to be useful.

Then we went up to Thermal Engineering Section where Professor Palivos welcomed us. He had prepared a comprehensive presentation about renewable energy forms and more specifically on solar energy.

We got answers to the questions that we have prepared before the visit, for instance:

- How efficient are solar panels?
- How do solar concentrators work?
- Do solar panels wear out?
- Why do the solar panels look like wings?
- How do solar panels convert the Sun's energy into electricity?

and others.

During the capturing and editing process we had, as usual, a difficulty to decide which parts of the original video should be cut. We also realised the huge improvement of the quality of the video in relation to our first attempt the "Christmas Fair".

After the capturing and editing process, which was the most difficult part, we uploaded the production as per the standard procedure.

### **Some comments**

Although this production was within the framework of the International Joint Project on Renewable Energy we did not seem to have a particular interest in discussing it at the chat board. We have focused more to the other productions. The reason could be that it was too difficult to get into this subject in English in a spontaneous dialogue. The use of dictionary and our teacher's support is necessary to prepare texts on scientific subjects.

## SCHOOL FORESIGHT

Movies from school Congress

- ◆ *Interview with the Exhibition Coordinator - Liberec*

A movie from DTV (Children TV)for Web TV. ...

- ◆ *Giannopoulos School - Athens*
- ◆ *Interview from Students - Athens*
- ◆ *Interview with exhibition guides - Liberec*
- ◆ *A movie from DTV (Children TV)...*
- ◆ *Interview from students II - Athens*
- ◆ *Interview with exhibition guides II - Liberec*

The WebTV for Schools has been selected to be promoted under the European Science Week 2004 activities.



**School Foresight** **WebTV for schools**  
100656-CP-1-2002-1-GR-MINERVA-M

**What is WebTV?**  
The Web TV for Schools project encourages students to become active learners and to realize the value of informal learning as an integral part of education.  
The project involves students in extended authentic episodes of playful learning.

Students select a subject, collect the content and write the scenario

capture, edit and upload the film

watch the productions and communicate via the chat tool available at the WebTV for Schools Platform

and publish the WebTV magazines.

[www.ellinogermaniki.gr/ep/webtv](http://www.ellinogermaniki.gr/ep/webtv)

Logos of the European Union and participating countries (Denmark, Germany, Finland, Greece, Italy, Spain, Sweden, UK).

The consortium of the 'School-Foresight' project aimed at communicating to the general public and specifically to secondary school students, RTD projects results, which may influence the school of tomorrow.

The School-Foresight project, funded by the EC under the European Science Week 2004 initiative, implemented information dissemination and awareness creation activities in five European countries (Greece, Romania, Bulgaria, Estonia, Czech Republic). School-Foresight realized different visions for the "intelligent school of tomorrow" based on RTD projects targets and results.

At a first stage a selection of Research Technology Development (RTD) projects (mainly under FP5) of high impact and added value is carried out. The final selected projects were promoted within the context of the project's events. In this respect School-Foresight offered a unique opportunity to a limited number of R&D cases related to the formation of the school of tomorrow to be publicised and presented in the two-week exhibitions (in the five above-mentioned cities) and in further dissemination measures (project's website, publicity material, etc.).

During these activities some additional videos were added in the WebTV for Schools platform in order to be viewed by the students visiting the exhibitions

## Chapter 6

### *Evaluation of the Web TV for Schools Project*

#### *6.1 General objectives of the evaluation*

According to the general objectives of the WebTV project, the pedagogical framework was designed to support activities and processes that are critical for facilitating intentional and thoughtful learning. It was not our purpose to propose a rigid and pre-determined pedagogical approach but rather to suggest a skeletal framework that would be general enough to fit the pedagogical traditions of the various countries participating in the project and respect cultural diversity. It was also considered to be important to develop scenarios of collaborative movie realizations and define diverse activities critical from this perspective.

Guided through these objectives of the project the evaluation focused mainly on the following aspects:

**Inquiry learning – Critical thinking:** Working with the different aspects of the WebTV productions, teachers were instructed to guide the students to work for solving complex and authentic problems. We stressed the importance of encouraging students to engage in inquiry learning by selecting sufficiently multi-faceted topics that provide ample opportunities for engaging in deepening inquiry. The task of designing and realizing WebTV video-productions was used as a means of providing experiences of this kind of multi-faceted and meaningful learning challenges.

**Motivational and Self-regulated learning:** Teachers were instructed to facilitate the active participation of the students to the multi-faceted topics used of the WebTV activities in ways that make it possible for the students to develop self-monitoring and regulation skills. This was done by guiding the students to realize the projects themselves, in collaboration with other students. Rather than dictating the students exactly what to do, WebTV projects focused on facilitating students' own self-regulation and encouraged their own initiative. It considered important to give the students greater and greater control over the WebTV activities, as they learned how to work in groups in an international context.

**Collaborative learning:** The project encouraged the collaboration among students. Collaboration was encouraged not only between classmates, but also with their virtual classmates from the other countries that participated in the project. This was done through video-links, email, chat and videoconferencing. In this case, collaboration was considered not only as a skill but also how it can enhance learning.

**Technical skills:** The classroom activities concerning the use of new technologies, helped to acquire knowledge related to the topics of the project like movie productions, image processing, making of video, video-conferencing, internet search, bulletin board etc. All these practices of using ICT strongly involve interdisciplinary applications as languages and literature (writing the scenario), foreign language (subtitles), arts, sciences, social studies and so on.

## 6.2 Evaluation methodology

Before the implementation of the Web-TV activities, we gave to students, as pre-tests, a series of questionnaires concerning the interest, the motivational beliefs, the collaboration, the learning strategies, and the technical skills. We also asked the teachers to complete a questionnaire gathering information about the school site. After the administration of these questionnaires, students and teachers worked on the Web-TV productions. At the end of their activities the same questionnaires were administrated again to the students as post-tests. Teachers' thoughts and remarks concerning the Web-TV activities were also collected after the completion of the activities. It was planned to evaluate the above mentioned expectations in a quasi-experimental test design with experimental groups and pre- and post-tests. This may be considered as the more adapted design to test effects that are due to the treatment - the participation in the project - in contrast to other factors. The statistical tests examine the interaction between the dependent time-factor (changes from pre-test to post-test) and the independent group factor (differences between schools).

The present investigators were aware of the exploratory nature of the present study. A great many interacting variables that cannot be controlled affect implementation of school projects, such as WebTV. Each school provides its own context that differs in multiple ways from other schools. While working with minimal resources over a limited period of time, there cannot be too large measurable effects of an intervention. Taking these constraints and challenges into consideration, we were, nevertheless, committed to assess WebTV's pedagogical effectiveness as rigorously as possible. Toward this end we performed a series of pre-test and post-test measurements. While assessing the results, it

may be advisable to address the overall level of various measures used rather than just look at differences between pre-test and post-test measures.

The main data source was a series of seven questionnaires explained below which have been developed according to the general objectives of the project. (The questionnaires are presented at the appendix at the end of the report). The below presented analyses indicate that in psychometrical terms the pre- and post-test measures used functioned adequately regardless of limited sample size, varying age groups, and national differences of the participants.

*Questionnaire 1 (general school information).* It was used in order to collect general information about the school sites. It consisted of 28 items divided in the following six parts: 1) name and address of the school site, 2) basic site description, 3) staff, 4) academic schedule and performance, 5) projects the school has participated in the past and 6) local ICT use. These data were collected in order to examine the differences between schools of the various countries.

*Questionnaire 2 (interest).* It consisted of a few introductory open questions and of 20 single items which referred to four domains: 1) interest in collaboration, 2) interest in technology, 3) interest in specific tasks, and 4) anxiety in specific tasks.

In the introductory open questions, the students reported different reasons for their interest in joining the Web TV project. The most common reason for joining was an overall positive expression, such as curiosity, new experiences, or think of it as something exciting. Second common category was getting international contacts and information about other countries and people. Third common category was issues related to teamwork and collaboration. Other reasons were also named, such as interest in technology, interest in cinema, and a change in normal school activities. The expectations related to Web TV were similar to students' reasons for joining the Web TV project. They mentioned new experience, teamwork, and international contacts and information about other countries.

An item analysis of the domains of the "Interest" questionnaire was conducted. The following table shows the reliability index of the items forming each domain (Cronbach's A) and some descriptive statistics (Mean and Standard Deviation of every domain) both for the pretest and the posttest. (Remember that the scale ranges from 1 to 7).

**Table 6.1**

| Scale                        | Pretest |        |        | Posttest |        |        |
|------------------------------|---------|--------|--------|----------|--------|--------|
|                              | A       | M      | SD     | A        | M      | SD     |
| 1. Interest in collaboration | .8525   | 5.4474 | 1.2047 | .8400    | 5.4133 | 1.1424 |
| 2. Interest in technology    | .9421   | 5.0738 | 1.5948 | .9530    | 5.0515 | 1.6702 |
| 3. Interest in specific task | .8756   | 5.0964 | 1.4034 | .9134    | 4.8799 | 1.5238 |
| 4. Anxiety in specific task  | .7346   | 3.3109 | 1.1933 | .6634    | 3.1413 | 1.1894 |

The between-construct correlations show that “interest in specific task” (interest in Web TV activities) was strongly related to “interest in collaboration” ( $r = .78$ ,  $p < .0005$  at pretest, and  $r = .719$ ,  $p < .0005$  at posttest). See the following table for the inter-correlations.

**Table 6.2:** Inter-correlations among the domains of “Interest” questionnaire

| Scale                        | Pretest |       |      | Posttest |        |      |
|------------------------------|---------|-------|------|----------|--------|------|
|                              | 1       | 2     | 3    | 1        | 2      | 3    |
| 1. Interest in collaboration |         |       |      |          |        |      |
| 2. Interest in technology    | .199*   |       |      | .334**   |        |      |
| 3. Interest in specific task | .780**  | .294* |      | .719**   | .401** |      |
| 4. Anxiety in specific task  | -.035   | -.168 | .084 | -.094    | .013   | .084 |

Note: \* indicates that  $.0005 \leq p \leq .05$ , and \*\* indicates that  $p < .0005$

Questionnaire 3 (motivational beliefs). It was related to motivational beliefs and was based on the Motivational Strategies for Learning Questionnaire (MSLQ) developed by Pintrich, R.R., & DeGroot, E.V. (1990). In MSLQ the items are divided into two main parts, namely about motivation and about learning strategies. The questionnaire for the WebTV contained 26 single items obtained after slight modifications of the ones contained at the motivation part of MSLQ. These 26 items form the following five domains: 1) intrinsic goal orientation, 2) extrinsic goal orientation, 3) task value, 4) control of learning beliefs, and 5) self-efficacy for learning and performance.

Goal orientation refers to the student’s perception of the reasons why he/she is engaging in a learning task. Intrinsic goal orientation concerns the degree to which the student perceives him/herself to be participating in a task for reasons such as challenge, curiosity and mastery. Having an intrinsic goal orientation towards an academic task indicates that the student’s participation in the task is an end all to itself, rather than participation being a means to an end. Extrinsic goal orientation complements intrinsic goal orientation and concerns the degree to which the student perceives him/herself to be participating in a task for reasons such as grades, rewards, performance, evaluation by others and competition. When one is high in extrinsic goal orientation, engaging in a learning task is the means to an end. The main concern the student has is related to issues that are not directly related to participating in the task itself (such as grades, rewards, comparing one’s performance to that of others). Goal orientation refers to the reasons why the student is participating in the task (“Why am I doing this?”). Task value differs from goal orientation in that task value refers to the student’s evaluation of the how interesting, how important and how useful the task is (“What do I think of this task?”). High task value should lead to more involvement in one’s learning. Control of learning refers to students’ beliefs that their efforts to learn will result in positive outcomes. It concerns the belief that outcomes are contingent on one’s own effort, in contrast to external factors such as the teacher. If students believe that their efforts to study make a difference in their learning, they should be more likely to study more strategically and effectively. The items comprising this scale assess

two aspects of expectancy: expectancy for success and self-efficacy. Expectancy for success refers to performance expectations, and relates specifically to task performance. Self-efficacy is a self-appraisal of one's ability to master a task. Self-efficacy includes judgments about one's ability to accomplish a task as well as his/her confidence in his/her skills to perform that task.

An item analysis of the domains of the "Motivation" questionnaire was conducted. The following table shows the reliability index of the items forming each domain (Cronbach's A) and some descriptive statistics (Mean and Standard Deviation of every domain) for the pretest and posttest.

**Table 6.3**

| Scale                                         | Pretest |        |        | Posttest |        |        |
|-----------------------------------------------|---------|--------|--------|----------|--------|--------|
|                                               | A       | M      | SD     | A        | M      | SD     |
| 1. Intrinsic goal orientation                 | .7468   | 4.7151 | 1.1749 | .5518    | 4.6909 | 1.0528 |
| 2. Extrinsic goal orientation                 | .6939   | 4.5968 | 1.3523 | .7266    | 4.3244 | 1.3028 |
| 3. Task value                                 | .8174   | 4.8772 | .9799  | .7029    | 4.7462 | .8608  |
| 4. Control of learning beliefs                | .5671   | 5.0403 | 1.0677 | .6785    | 4.9552 | 1.1317 |
| 5. Self-efficacy for learning and performance | .8472   | 4.6732 | .9879  | .8955    | 4.6547 | 1.0697 |

An overall outcome is that students of all schools seemed to be intrinsically motivated and value the project a great deal. This indicates why they participated actively in the project-related tasks.

The between-construct correlations show that "intrinsic goal orientation" was strongly related to "task value" at pretest ( $r = .755$ ,  $p < .0005$ ), but not so strongly at posttest. Some other correlations also appeared between various domains but they were not so strong. See the following table for the inter-correlations.

**Table 6.4: Inter-correlations among the domains of "Motivation" questionnaire**

| Scale                                         | Pretest |        |        |        | Posttest |        |        |        |
|-----------------------------------------------|---------|--------|--------|--------|----------|--------|--------|--------|
|                                               | 1       | 2      | 3      | 4      | 1        | 2      | 3      | 4      |
| 1. Intrinsic goal orientation                 |         |        |        |        |          |        |        |        |
| 2. Extrinsic goal orientation                 | .386**  |        |        |        | .353**   |        |        |        |
| 3. Task value                                 | .755**  | .566** |        |        | .650**   | .546** |        |        |
| 4. Control of learning beliefs                | .592**  | .444** | .701** |        | .538**   | .292** | .618** |        |
| 5. Self-efficacy for learning and performance | .705**  | .512** | .698** | .534** | .637**   | .355** | .601** | .513** |

Note: \* indicates that  $.0005 \leq p \leq .05$ , and \*\* indicates that  $p < .0005$

Questionnaire 4 (collaborative learning). These questions were partly a short version of the “Inventory of Competence and Knowledge Sharing” (Hakkarainen et al., 2004). It consisted of 26 items which referred to six domains: 1) peer learning (Pintrich P.R et al. 1991), 2) experienced knowledge sharing in a class, 3) knowledge building culture, 4) school support for knowledge sharing, 5) trust in school, and 6) progressive problem solving. The questionnaire was designed to assess the extent to which students are facilitating each other learning.

Experienced knowledge sharing indicates that students consider their peers to be willing to share their emerging knowledge and competence rather than orient toward competing with one another. It was also assessed to what extent this kind of study practice was deliberately supported and aimed at by the school. Knowledge-building culture indicates that students are encouraged jointly to advance shared ideas and thoughts. In order to share knowledge among peers, trust needs to prevail at school. The classroom should provide a “safety zone” (Mahn & John-Steiner, 2002) that encourages the participants to share their ideas without being afraid of failures or mistakes.

An item analysis of the domains of the “Collaboration” questionnaire was conducted. The following table shows the reliability index of the items forming each domain (Cronbach’s A) and some descriptive statistics (Mean and Standard Deviation of every domain) for the pretest and posttest.

**Table 6.5**

| Scale                                       | Pretest |        |        | Posttest |        |        |
|---------------------------------------------|---------|--------|--------|----------|--------|--------|
|                                             | A       | M      | SD     | A        | M      | SD     |
| 1. Resource management: Peer learning       | .5623   | 3.8521 | 1.1425 | .5252    | 4.0861 | 1.0877 |
| 2. Experienced knowledge sharing in a class | .6191   | 4.0948 | .9068  | .4787    | 4.1573 | .8031  |
| 3. Knowledge building culture               | .4088   | 3.7622 | .9927  | .3680    | 3.9644 | .8771  |
| 4. School support for knowledge sharing     | .8114   | 4.1816 | 1.1357 | .7094    | 4.1284 | .9061  |
| 5. Trust in school                          | .4145   | 4.0843 | 1.0504 | .4212    | 4.3577 | .9884  |
| 6. Progressive problem solving              | .5119   | 4.0805 | 1.0523 | .5675    | 4.2772 | 1.0877 |

Overall, the students participating in Web TV thought that they were ready to put a lot of effort and continuously work at the edge of their competence. Further, the students were also quite strongly committed to sharing knowledge with their fellow students and willing to share all their skills and competencies. They felt that school is committed to support knowledge sharing as well. Trust in school was especially frequently experienced: the students reported that trust prevails in school so as to make knowledge sharing possible.

The between-construct correlations show that there were no especially strong correlations between pairs of domains for this questionnaire neither at the pretest nor at the posttest.

**Table 6.6:** Inter-correlations among the domains of «Collaboration» questionnaire

|   | Pretest |        |        |        |       | Posttest |        |        |        |        |
|---|---------|--------|--------|--------|-------|----------|--------|--------|--------|--------|
|   | 1       | 2      | 3      | 4      | 5     | 1        | 2      | 3      | 4      | 5      |
| 1 |         |        |        |        |       |          |        |        |        |        |
| 2 | .494**  |        |        |        |       | .525**   |        |        |        |        |
| 3 | .537**  | .430** |        |        |       | .414**   | .421** |        |        |        |
| 4 | .372**  | .594** | .551** |        |       | .331*    | .528** | .462** |        |        |
| 5 | .234*   | .277*  | .137   | .420** |       | .229*    | .283*  | .432** | .443** |        |
| 6 | .238*   | .279*  | .349** | .456** | .278* | .268*    | .239*  | .459** | .507** | .381** |

Note: \* indicates that  $.0005 \leq p \leq .05$ , and \*\* indicates that  $p < .0005$

*Questionnaire 5 (learning strategies).* This series of questions was based on the Motivational Strategies for Learning Questionnaire (MSLQ) developed by Pintrich, R.R., & DeGroot, E.V. (1990). The questionnaire for the WebTV contained 50 single items obtained after slight modifications from the learning strategies part of MSQL. These 50 items referred to the 9 following domains: 1) rehearsal, 2) elaboration, 3) organization, 4) critical thinking, 5) metacognitive self-regulation, 6) time and study environment, 7) effort regulation, 8) peer learning, and 9) help seeking.

Basic rehearsal strategies involve reciting or naming items from a list to be learned. These strategies are best used for simple tasks and activation of information in working memory rather than acquisition of new information in long-term memory. These strategies are assumed to influence the attention and encoding processes, but they do not appear to help students construct internal connections among the information or integrate the information with prior knowledge. Elaboration strategies help students store information into long-term memory by building internal connections between items to be learned. Elaboration strategies include paraphrasing, summarizing, creating analogies, and generative note-taking. These help the learner integrate and connect new information with prior knowledge. Organization strategies help the learner select the appropriate information and also construct connections among the information to be learned. Organizing is an active, effortful endeavor, and results in the learner being closely involved in the task. This should result in better performance. Critical thinking refers to the degree to which students report applying previous knowledge to new situations in order to solve problems, reach decisions, or make evaluations. Metacognition refers to awareness, knowledge, and control of cognition. Questionnaire 5 is focused on the control and self-regulation aspects of metacognition, not the knowledge aspect. There are three general processes that make up the metacognitive self-regulatory activities: planning, monitoring, and regulating. Planning activities (such as goal setting and task analysis) help to activate, or prime, relevant aspects of prior knowledge that make organizing and comprehending the material easier. Monitoring activities include tracking of one's attention as one reads, and self-testing and questioning. These assist the learner in understanding the material and integrating it with prior knowledge. Regulating refers to the fine-tun-

ing and continuous adjustment of one's cognitive activities. Regulating activities are assumed to improve performance by assisting learners in checking and correcting their behavior as they proceed on a task. Besides self-regulation of cognition, students must be able to manage and regulate their time and their study environments. Time management involves scheduling, planning, and managing one's study time. This includes not only setting aside blocks of time to study, but the effective use of that study time, and setting realistic goals. Time management varies in level, from an evening of studying to weekly and monthly scheduling. Effort regulation includes students' ability to control their effort and attention in the face of distractions and uninteresting tasks. Effort management is self-management, and reflects a commitment to completing one's goals, even when there are difficulties or distractions. Effort management is important to academic success because it not only signifies goal commitment, but also regulates the continued use of learning strategies. Collaborating with one's peers has been found to have positive effects on achievement. Dialogue with peers can help a learner clarify things and reach insights he/she may not have attained on his/her own. Another aspect of the environment that the student must learn to manage is the support of others (help seeking). This includes both peers and instructors. Good students know when they don't know something and are able to identify someone to provide them with some assistance. There is a large body of research that indicates that peer help, peer tutoring, and individual teacher assistance facilitate student achievement.

An item analysis of the domains of the «Learning Strategies» questionnaire was conducted. The following table shows the reliability index of the items forming each domain (Cronbach's A) and some descriptive statistics (Mean and Standard Deviation of every domain) for the pretest and posttest.

**Table 6.7**

| Scale                            | Pretest |        |        | Posttest |        |        |
|----------------------------------|---------|--------|--------|----------|--------|--------|
|                                  | A       | M      | SD     | A        | M      | SD     |
| 1. Rehearsal                     | .7710   | 4.3976 | 1.2614 | .6502    | 4.2248 | 1.1378 |
| 2. Elaboration                   | .7848   | 4.2696 | 1.0256 | .7440    | 4.4024 | 1.0022 |
| 3. Organization                  | .6793   | 4.2917 | 1.1578 | .6747    | 4.3602 | 1.1866 |
| 4. Critical thinking             | .7225   | 4.2365 | 1.0262 | .7293    | 4.2467 | .9995  |
| 5. Metacognitive self-regulation | .7957   | 4.2640 | .8833  | .7335    | 4.2846 | .7977  |
| 6. Time and study environment    | .6916   | 4.6835 | .9288  | .5676    | 4.6708 | .8320  |
| 7. Effort regulation             | .6086   | 4.5286 | 1.0332 | .4013    | 4.2613 | .9038  |
| 8. Peer regulation               | .5143   | 4.0608 | 1.1182 | .5232    | 4.0851 | 1.1226 |
| 9. Help seeking                  | .3161   | 4.4540 | .8742  | .3834    | 4.3090 | .9285  |

The between-construct correlations show that «rehearsal» was strongly related to «organization» at pretest ( $r = .709$ ,  $p < .0005$ ), but not so strongly at posttest. A strong correlation was also observed between «elaboration» and «critical

thinking» ( $r = .719$ ,  $p < .0005$  at pretest, but this correlation weakened at the posttest), and also between «elaboration» and «metacognitive self-regulation» ( $r = .727$ ,  $p < .0005$  at pretest and  $r = .744$ ,  $p < .0005$  at posttest). See the following tables for the inter-correlations.

**Table 6.8:** Inter-correlations among the domains of «Learning Strategies» questionnaire

| Scale                            | Inter-correlations at pretest |        |        |        |        |        |       |       |
|----------------------------------|-------------------------------|--------|--------|--------|--------|--------|-------|-------|
|                                  | 1                             | 2      | 3      | 4      | 5      | 6      | 7     | 8     |
| 1. Rehearsal                     |                               |        |        |        |        |        |       |       |
| 2. Elaboration                   | .593**                        |        |        |        |        |        |       |       |
| 3. Organization                  | .709**                        | .636** |        |        |        |        |       |       |
| 4. Critical thinking             | .418**                        | .719** | .461** |        |        |        |       |       |
| 5. Metacognitive self-regulation | .615**                        | .727** | .629** | .642** |        |        |       |       |
| 6. Time and study environment    | .420**                        | .345** | .382** | .184   | .508** |        |       |       |
| 7. Effort regulation             | .492**                        | .507** | .346** | .378** | .572** | .578** |       |       |
| 8. Peer regulation               | .275*                         | .307*  | .258*  | .311*  | .263*  | .111   | .196* |       |
| 9. Help seeking                  | .279*                         | .347** | .285*  | .250*  | .325** | .213*  | .159  | .322* |

Note: \* indicates that  $.0005 \leq p \leq .05$ , and \*\* indicates that  $p < .0005$

**Table 6.9**

| Scale                            | Inter-correlations at posttest |        |        |        |        |        |       |       |
|----------------------------------|--------------------------------|--------|--------|--------|--------|--------|-------|-------|
|                                  | 1                              | 2      | 3      | 4      | 5      | 6      | 7     | 8     |
| 1. Rehearsal                     |                                |        |        |        |        |        |       |       |
| 2. Elaboration                   | .597**                         |        |        |        |        |        |       |       |
| 3. Organization                  | .645**                         | .610** |        |        |        |        |       |       |
| 4. Critical thinking             | .522**                         | .633** | .416** |        |        |        |       |       |
| 5. Metacognitive self-regulation | .611**                         | .744** | .615** | .646** |        |        |       |       |
| 6. Time and study environment    | .374**                         | .276*  | .446** | .259*  | .495** |        |       |       |
| 7. Effort regulation             | .314*                          | .335** | .315*  | .141   | .474** | .551** |       |       |
| 8. Peer regulation               | .414**                         | .505** | .302*  | .412** | .482** | .170   | .147  |       |
| 9. Help seeking                  | .177                           | .235*  | .179   | .095   | .300*  | .432** | .237* | .265* |

Note: \* indicates that  $.0005 \leq p \leq .05$ , and \*\* indicates that  $p < .0005$

Questionnaire 6 (technical skills): This questionnaire covered activities concerning the use of new technologies and the acquisition of knowledge related to the procedures needed for a movie production (video skills, video-conferencing, internet search, bulletin board etc). It consisted of 105 single questions covering the following five themes:

- 1) Description of the usage of ICT (frequency, duration, contents). The 26 items of Question 9 (respectively Question 11) formed seven distinct domains:
  - Use of office software packages (word processing, databases, excel, file management etc).
  - Image processing and related topics.
  - Working with educational tools (encyclopaedias, educational CDs etc.).
  - Programming languages.
  - Internet communication (chat, forums, videoconferencing, phoning via the net etc.).
  - Getting information on the net (searching engines, downloading etc.).
  - Playing electronic games.
- 2) Mastery of ICT tasks. The 17 items of this part formed five distinct domains:
  - Use of office software packages.
  - Internet communication.
  - Getting information on the net.
  - Publishing activities (creating web pages, desktop publishing, Hyperstudio etc.).
  - Multimedia processing (digital voice processing, video authoring, image processing etc.).
- 3) Utility of the ICT. The 13 items of this part formed the four following domains:
  - Professional and social usage.
  - School usage.
  - Implications for the work.
  - Implications for the acquisition of ICT.
- 4) Effects to the persons and towards the relations with others. The seven items of this part formed the two following domains
  - Effects towards the adopting role (experts' role).
  - Effects towards the relations and the interactions between people (collaboration, isolation).

#### 5) Acquisition of technical skills.

*Questionnaire 7 (teacher's questionnaire):* Its purpose was to get information about the participating teachers' experiences. After the completion of the project, teachers were asked to describe their experiences of the Web TV project, and answer to questions such as: 1) what went right or wrong in the activities, 2) the possible reasons for a failure to accomplish a task, 3) about the collaboration of students both among them and with other people (with teachers, experts etc) 4) what attracted the students' interest, 5) if they observed any changes of the students' attitude towards courses (perhaps, towards the ones related to the Web TV project), e.g. did the project motivate the students to study «science» or «history» etc, or has it influenced the way they study (their learning strategies)? Qualitative self-reports, made by the school teachers about the experiences developed during the project were used to give additional information to specific questions.

The main difficulty that most of the teachers faced during the implementation of the project was to persuade their students that it was necessary to follow specific steps for producing the videos. Most teachers reported that their students enjoyed shooting the film but it took them a while to realize the importance of the preparatory activities for a successful production. Students were anxious to start shooting and often underestimated the importance of planning, and script writing before shooting.

All students worked in groups and although the planning in each school environment was different, in all cases collaborative learning was encouraged. The fact that students had been assigned specific tasks and roles in the working group ensured the active participation of all students.

The teachers reported that they found the pedagogical framework of the project very helpful. Some of the teachers (e.g., from Denmark) mentioned that they designed their classes in a completely different way so as to make it possible to explore better the recommendations made in the pedagogical framework.

One problem initially reported and discussed was the lack of communication amongst the students from the various European schools. In order to encourage such communication and exchange of ideas the pedagogical team, in collaboration with the teachers, suggested that each country should prepare a film about the same topic. The topic selected was "alternative forms of energy". The preparation of these films about energy triggered the communication among the participating schools and promoted the inter-school collaboration. As soon as all schools uploaded their productions, students' were motivated to respond to their virtual classmates contributions. After all, this appears to be one of the main reasons why they decided to take part in the project, as reported in their questionnaires.

### 6.3 Sample description

The sample consists of 138 pupils. However, the sample is quite heterogeneous with regards to the age of the pupils (see the following table). This divergence will probably affect the global performances of each school, since older students, is expected to be more familiar with ICT techniques than younger ones.

**Table 6.10:** Distribution of the sample following the age and the sex.

|               | Boys | Girls | Total | Mean age | Std. Deviation |
|---------------|------|-------|-------|----------|----------------|
| EA - Greece   | 17   | 13    | 30    | 14.20    | .41            |
| JVK - Finland | 8    | 9     | 17    | 14.50    | .52            |
| VHS - Denmark | 16   | 13    | 29    | 18.21    | 1.57           |
| BGS - Austria | 11   | 6     | 17    | 16.29    | .69            |
| FVS - Germany | 19   | 4     | 23    | 16.35    | .49            |
| LHP - France  | 5    | 17    | 22    | 15.23    | .43            |
| Total         | 76   | 62    | 138   | 15.87    | 1.68           |

The gender distribution appears to be balanced (see table 10) unless for a couple of schools (FVS-Germany, LHP-France).

### 6.4 School profiles

#### *Ellinogermaniki Agogi (EA) – Greece*

EA is a private middle-class junior high school of high-achieving students located in the northern suburbs of Athens. The school participated in many international and national innovative projects in the past. It is equipped with 25 www-usable computers located at the library and at the computer labs. The computers are accessible from teachers and students even beyond class time. In the formal curriculum, ICT is mainly used for science teaching, technology, and computer science.

The class which participated in the WebTV project consisted of 17 boys and 13 girls of 14-15 years old under the guidance of a male chemistry teacher and the assistance of the technical staff of the school. In the context of the program, the students of EA shot four films entitled: a) Acidification of Milk, b) Christmas Fair, c) The Great Asklepieia, and d) Energy: «Solar Energy».

In completing the teacher-evaluation questionnaire, the teacher of the WebTV class reported that the students showed a great interest for the project because they were attracted by the idea of shooting their own movie and becoming familiar with the technology required for this purpose. However, according to the teacher, the students were not very happy with the idea that during the shooting of the film they should follow specific instructions. Most of them expected that the whole procedure would be much easier. They learned that even if they want to do something they like, they have to work hard. The project gave the opportunity to students to test and practice new knowledge by participating in several different working groups, according to the needs of each film. The students implemented the new knowledge in the formal curriculum as one of the films was associated with a subject in the biology class and there was a direct link between the project and the curriculum. In any case, the ideas of working together and searching for any type of information required for the film were always important for them. He also reported that he tried to play an active role in the first film as he believes that it is important for the students to understand that if they want to do something good, they have to work together and under the guidance of a specific plan. As time went by, his participation became smaller and the last film was shot by the students without any help from him. He also mentioned that it was difficult for him to persuade his students to join in different working teams, because almost everybody wanted to become a cameraman or the director. For this reason, several discussions were made in order to persuade the students for the importance of every working team in shooting a film. He mentioned that collaboration in a class is the most important thing for the normal function of the class and that collaboration can be achieved only when teachers try to discuss with their students. This is the reason that his collaboration with his students worked excellent.

#### *Juhani Vuorinen Koulu (JVK) – Finland*

JVK is a public middle-class junior high school at a small town. The school did not participate in any international or national innovative projects in the past. It is equipped with 32 computers, located at the classrooms. The computers are accessible from teachers and students even beyond class time. In the formal curriculum, ICT is mainly used for programming, word processing and internet navigation.

The class which participated in the WebTV project consisted of 8 boys and 9 girls of 14-15 years old under the guidance of three female teachers. The students of JVK shot five films entitled: a) Christmas in Finland, b) Korpelan Voima (waterpower), c) To Swim in Ice, d) Sledge Ride Siperianhuski, and e) the Finnish Language.

The teacher of the WebTV class (the one who completed the teachers' evaluation questionnaire) reported that the students were enthusiastic about the project but sometimes there were problems with the organization of the work. When the work was divided into different sub-tasks, the last phase usually did not work very well. The students learnt to be less "afraid" of technology and to take responsibility of their own work. The project gave the opportunity to those students who were willing to test and practice new knowledge. Some students did not want to participate in the technical part, but maybe the planning of the work gave them something new as well. The teachers tried to divide

responsibility among the students and tried to do less as possible for them. She also reported that she was responsible of planning the time schedules and planning in general about what is going to be done and how to carry out the work. Her role was to guide, to see how the work was going on, because the students were not taking initiatives themselves. The teacher's involvement used to "fade away" during the process and tried to give gradually more responsibility and active participation to the students. One problem had to do with the motivation of students. The students almost always wanted a reward for their work. Sometimes there was also some disagreement among the group who is doing what. Most students wanted to focus on the same particular topic. She resolved the problem of guidance by listening to the students and explaining to them that it is not possible for everybody to do everything. She tried to divide the work evenly and to take everybody's opinion under consideration. Concerning motivation, it was a question about giving orders and expressing arguments like "you are the only school in Finland who participates in the project, and this project can help you with your future studies and work". There was collaboration among the class, but it was difficult to change the structures or already existing groups in the class. On one hand, some group wanted to do all the work itself and did not "need" the other students. On the other hand, some of the students were not too eager to participate in different groups. Maybe the only advantage was the transferring of the know-how from one group to another (e.g., how to use the camera, how to edit, etc). As the students were given more responsibility, they had to learn the various issues by "try and error". More or less, learning was on their hands.

#### *Vejle Handelsskole (VHS) – Denmark*

VHS is an urban, public, middle-class high school. It is not an ordinary school but a commercial institution of education. The school participated in a few international and national innovative projects in the past. It is equipped with 400 www-usable computers located at the library, at the classrooms, at the labs and other areas of the school. The computers are accessible from teachers and students even beyond class time and are used at the formal curriculum.

The class which participated in the WebTV project consisted of 16 boys and 13 girls of 17-20 years old under the guidance of three teachers. The students of VHS shot five films entitled: a) BONUS Wind Energy, b) ELSAM Energy Production, c) Danish School Culture, d) Culture and Integration in Denmark, and e) Culture and Sights in Denmark.

The teachers of the WebTV class reported that the students showed a great interest to work with the different tasks of the project. The students experienced how important it is to plan and coordinate activities in their groups and learned how to plan and work over a longer period of time. They also learned not to be afraid to show their work to people in other countries. The teachers helped their students by presenting the activities which had to be carried out during the project and by explaining and showing to their students how to use technology. During the project, the teachers assisted the students as tutors/consultants. For example, they offered their help about some technical issues (picture, sound, editing). At the beginning of the project there were a lot of problems concerning collaboration but during the project the students learned the importance of listening and tolerance to others. The students had in a very large extent more con-

trol on the learning process than they normally do as they had the chance to decide when and how to work, when and who to consult. They used to make their own logbooks, take their own decisions and write summaries to the teachers about how the project was running.

#### *Bundesgymnasium and Bundesrealgymnasium Schwechat (BGS) – Austria*

BGS is a suburban, public, middle-class junior high school. The school participated in a few international but in no national innovative projects in the past. It is equipped with 30-40 computers, located at the library, at the classrooms, at the labs and other areas of the school. The computers are accessible from teachers and students even beyond class time and they are used in all subjects of the formal curriculum.

The class which participated in the WebTV project consisted of 11 boys and 6 girls of 16-17 years old under the guidance of a male teacher. The students of BGS shot two films entitled: a) Hydroelectric Power, and b) Safety and Driving.

Concerning the implementation of the project, the teacher of the WebTV class reported that the technical aspects worked well. On the other hand, what did not work well was the communication structure. When they set up a real time chat, no one was there and this happened several times. He also reported that his students did not have the chance to practice the new knowledge and that new knowledge was not implemented at the formal curriculum. The teacher's role was to give guidelines, to support, and to provide the whole structure of the procedures. His opinion about collaborative work was that sometimes it is not useful because it is too much time-demanding as organizational tasks are necessary and the whole work is not worth to make such a time effort. Students were lazy and preferred to work for themselves or even not to work at all. The teacher had to activate them and organize the whole collaboration. Finally, the teacher reported that his students did not actually have any control of their learning process.

#### *Freiherr Vom Stein Schule (FVS) – Germany*

FVS is an urban, public, middle-class junior high school. The school participated in a few international innovative projects in the past. It is equipped with over 30 computers, located at the labs. The computers are not accessible from teachers and students beyond class time and they are used for presentations and internet navigation.

The class which participated in the WebTV project consisted of 19 boys and 4 girls of 16-17 years old under the guidance of a male teacher. The students of FVS shot three films entitled: a) The Beginning, b) The School, and c) The Location: Frankfurt.

The teacher of the WebTV class reported that the video production was a special educational experience for the students. Both the creation of the storyboards and the shooting of the videos in groups were highly motivating and a

creative challenge. The students learned to plan, execute and reflect on a project. In contrast to a regular classroom situation, this work was production-oriented. In the end, the students were very proud of their productions. He also reported that there were three major problems: the uploading of the videos to the Internet, the cooperation with the project's website and real time communication with other participating schools. Particularly the pop-up menus of the website and the program-based work with the video spots created much frustration. Online communication and the uploading of all video-spots failed, much to their discontent. Students also had the opportunity to study the theory and practical application concerning video production. The students' individual personalities have been in the center of this project. Their project-based reflection of their school career – in the past, present, and future – resulted in the great improvement of their intrinsic motivation and shaped their views and expectations of their future school career. The teacher also reported that not every single step of the project has been shared by all students. Everyone joined in the video shooting, but not necessarily in the actual production of the videos. Technical experts among them performed the latter. The project generally was to a large degree student-oriented and this contributed to its success considerably. Even the teacher was impressed by the students' productive and innovative group work. Concerning the students' collaboration, he commented that successful collaboration is necessarily dependent on the students' ability to connect among themselves, to cooperate, to be product-oriented. This was the case at his class. The students realized that success is based on individual dependability and productive teamwork efforts. This resulted in a significant improvement of the collaboration in the classroom compared with the regular classroom activities. Students learned to rely on their own knowledge and potentials and to improve them independently, and effectively. Finally, concerning the control of student over their learning processes, he reported that student control of the learning and study processes are marginal in regular classroom. This project showed different approaches from which students obviously benefited.

#### *Lycée Henri Poincaré (LHP) – France*

Lycée Henri Poincaré is one of the pilot secondary schools of the Ministry of National Education in France for the ICT. The "Quai des Images" is a Web site created by one of the teachers of the school, presenting material about cinema and audiovisuals for teaching in the classes for 14-17 year old students. They learn the language of the cinema, the audiovisual, the history of cinema and get familiarized with audiovisual productions. The Lycée Henri Poincaré is one of the three institutions in France for the teaching of this subject.

The students of LHP shot five films in the framework of the project, entitled: a) Essai, b) The Gesture, c) Dark Potter, d) Our Class of Audiovisual, and e) The Bicentenary of the Secondary School Henri Poincaré.

The class which participated in the WebTV project consisted of 5 boys and 17 girls of 15-16 years old under the guidance of a female cinema teacher.

The teacher of the WebTV class did not provide any more information about the school site or a report concerning the outcomes from this project. Therefore, there are no more qualitative data available concerning this school.

## 6.5 Analysis of the Questionnaires

As it is described previously, the questionnaires were divided into the following main topics:

- Interest (questionnaire 2)
- Motivational beliefs (questionnaire 3)
- Collaborative learning (questionnaire 4)
- Learning strategies (questionnaire 5)
- Technical skills (questionnaire 6)
- Teacher's questionnaire (questionnaire 7)

The most interesting findings from each questionnaire are discussed below. For the teacher's questionnaire we provide only qualitative data as this questionnaire describes their experiences.

We should note that each domain of questions was checked by three items at least and that all single items of questionnaires 2-5 were rated in a scale from 1 to 7.

### 6.5.1 Interest

The purpose of this questionnaire was to gather information about the students' interest. The data of the «Interest test» was examined with a Mixed Factorial Analysis of Variance (split-plot factorial ANOVA) with one dependent factor: «time» (difference between pre- and posttest) and one independent factor: «school» (schools from various countries). The analysis of the results showed no significant time effects (from pretest to posttest) overall for the schools as a whole. Some improvements were observed however, for some of the schools. For these differences, we conducted paired-sample t-tests to examine if they were significant. The Danish school (VHS) showed a significant increase in interest in technology (mean score at the pretest: 4.43 and at the posttest: 5.34,  $t(13)=2.319$ ,  $p=.035$  – remember that the scale ranges from 1 to 7). It also showed a slight improvement in interest in collaboration (mean score at the pretest: 4.97 and at the posttest: 5.43) and in the project's tasks (mean score at the pretest: 4.94 and at the posttest: 5.39), which however was not statistically significant. Some other schools also showed an improvement in some domains. For example, the German school (FVS) showed a slight improvement in interest in collaboration (mean score at the pretest: 4.85 and at the posttest: 5.20), which however was not statistically significant. The students of almost all

the participating schools showed less anxiety about project-related tasks but the results were not statistically significant. The absence of pre-post significance could be attributed to the fact that interest was already very high for most of the schools. The Mixed Factorial Analysis of Variance revealed that in every domain of questions there were significant school differences. These differences seem to be related to the fact that in all measures of interest both in pre and post-test the schools EA – Greece and LHP – France showed higher interest than the rest of the schools.

We present in detail the results from the statistical analysis about each domain of questions.

- 1) Concerning interest in collaboration, we observed a significant difference between schools  $F(5, 92)=7.765$ ,  $p<.0005$ , but no significant time effect or time-school interaction. Perhaps, the absence of time effect is due to the fact that the students' interest was rather high from the beginning. It seems that there was an improvement of students' interest in collaboration for some schools (VHS and FVS) but this improvement was not significant.

**Table 6.11:** measures for interest in collaboration

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 6.0952          | .7173          | 5.6976           | 1.2574         |
| JVK - Finland | 5.1647          | 1.2475         | 4.8118           | 1.2072         |
| VHS - Denmark | 4.9714          | 1.1737         | 5.4357           | .9621          |
| BGS - Austria | 4.8182          | .9816          | 4.5227           | .8305          |
| FVS - Germany | 4.8464          | 1.2744         | 5.2000           | 1.0583         |
| LHP - France  | 6.0762          | 1.1375         | 6.2095           | .6180          |
| Total         | 5.4474          | 1.2047         | 5.4133           | 1.1424         |

- 2) Concerning interest in technology, the results were about the same – significant school difference,  $F(5, 92)=2.685$ ,  $p=.026$ , but no significant time effect or time-school interaction. Again, we contribute the absence of time effect to the fact that the students' interest was rather high from the beginning. The students of VHS showed a significant improvement in interest in technology [ $t(13)=2.319$ ,  $p=.035$ ].

**Table 6.12:** measures for interest in technology

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.3683          | 1.6717         | 5.1357           | 1.9796         |
| JVK - Finland | 4.3765          | 2.0975         | 3.8824           | 2.2528         |
| VHS - Denmark | 4.4286          | 1.1173         | 5.3429           | .8959          |
| BGS - Austria | 4.8727          | 1.6131         | 4.6182           | 1.3091         |
| FVS - Germany | 5.7429          | 1.1106         | 5.7857           | 1.0182         |
| LHP - France  | 5.4333          | 1.3562         | 5.4571           | 1.2714         |
| Total         | 5.0738          | 1.5948         | 5.0515           | 1.6702         |

- 3) Concerning interest in the specific tasks of the project, we observed a significant difference between schools  $F(5, 92)=12.363$ ,  $p<.0005$ , but no significant time effect or time-school interaction. The students of VHS showed a slight improvement in interest in the project's tasks, but it was not significant.

**Table 6.13:** measures for interest in specific tasks

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.7571          | .9135          | 5.6095           | 1.3532         |
| JVK - Finland | 4.2265          | 1.4780         | 3.6471           | 1.4081         |
| VHS - Denmark | 4.9429          | 1.3574         | 5.3857           | .9526          |
| BGS - Austria | 4.5455          | 1.1067         | 4.1182           | 1.0056         |
| FVS - Germany | 4.3429          | 1.6027         | 3.7810           | 1.4672         |
| LHP - France  | 6.0333          | .9409          | 5.9429           | .9842          |
| Total         | 5.0964          | 1.4034         | 4.8799           | 1.5238         |

- 4) Concerning anxiety about the project-related tasks, the results were again the same. We observed a significant difference between schools  $F(5, 92)=4.249$ ,  $p=.002$ , but no significant time effect or time-school interaction. The students' anxiety was rather low from the beginning. The students of almost all the participating schools showed less anxiety about project-related tasks at the posttest but these differences were not significant.

**Table 6.14:** *measures for anxiety in specific tasks*

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 3.4548          | 1.2369         | 3.1524           | 1.3235         |
| JVK - Finland | 2.8706          | 1.3359         | 2.3588           | 1.1296         |
| VHS - Denmark | 4.2464          | 1.3625         | 3.8429           | 1.2847         |
| BGS - Austria | 3.2364          | .9953          | 3.8227           | .9152          |
| FVS - Germany | 3.1048          | .5851          | 3.1357           | 1.1248         |
| LHP - France  | 3.0762          | 1.0648         | 2.9429           | .7827          |
| Total         | 3.3109          | 1.1933         | 3.1413           | 1.1894         |

### 6.5.2 Motivational beliefs

The purpose of this questionnaire was to gather information about the thoughts and beliefs of students concerning schools, learning and themselves. The data of the «Motivation test» was examined with a Mixed Factorial Analysis of Variance with one dependent factor: «time» (difference between pre- and posttest) and one independent factor: «school» (schools from various countries). The analysis of the results showed no significant time effects (from pretest to posttest) overall for the schools as a whole. Some improvements were observed however, for some of the schools. For these differences, we conducted paired-sample t-tests to examine if they were significant. The Greek school (EA) showed a significant decrease in extrinsic goal orientation (mean score at the pretest: 4.92 and at the posttest: 4.13,  $t(20)=2.754$ ,  $p=.012$ ) and in task value (mean score at the pretest: 5.48 and at the posttest: 4.97,  $t(20)=2.888$ ,  $p=.009$ ). The students of the Greek school also showed a slight improvement in their beliefs concerning control of learning (mean score at the pretest: 5.52 and at the posttest: 5.14), which however was not significant. Some other schools also showed an improvement in some domains. For example, the Danish school (VHS) showed a slight improvement in intrinsic goal orientation (mean score at the pretest: 4.77 and at the posttest: 5.14) and at the same time a decrease in extrinsic goal orientation (mean score at the pretest: 5.36 and at the posttest: 4.70), which marginally was not statistically significant. The students of the Finnish school (JVK) also showed a slight, but not significant, increase in intrinsic goal orientation (mean score at the pretest: 3.38 and at the posttest: 3.76). The Mixed Factorial Analysis of Variance revealed that in almost every domain of questions there were either significant school differences or significant time-school interactions. The latter is due to the fact that there was a different change at the scores of the students of the various schools. The students of some schools showed an increase at their score and the students of the rest schools showed a decrease at their scores. Also, for three scales (intrinsic goal orientation, task values, and

self-efficacy for learning and performance) significant differences were observed between schools. These school differences seem to be related to the fact that in almost all measures of motivation both in pre and posttest the schools EA – Greece, LHP – France, and in some cases VHS – Denmark showed a higher score concerning motivation than the rest of the schools, while the school JVK – Finland showed constantly a lower score.

We present in detail the results from the statistical analysis about each domain of questions.

- 1) Concerning intrinsic goal orientation, we observed a significant difference between schools  $F(5, 87)=9.093$ ,  $p<.0005$ , but no significant time effect or time-school interaction. Perhaps, the absence of time effect is due to the fact that the students' intrinsic goal orientation was rather high from the beginning. The students of JVK and VHS showed a slight improvement in intrinsic goal orientation, but it was not significant.

**Table 6.15:** measures for intrinsic goal orientation

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.4405          | .7862          | 5.0357           | 1.0133         |
| JVK - Finland | 3.3824          | .9359          | 3.7647           | .9248          |
| VHS - Denmark | 4.7679          | .9275          | 5.1369           | .8452          |
| BGS - Austria | 4.5909          | 1.1526         | 4.2955           | 1.0537         |
| FVS - Germany | 4.7756          | 1.1479         | 4.9103           | 1.0037         |
| LHP - France  | 5.1422          | .9921          | 4.9118           | .8747          |
| Total         | 4.7151          | 1.1749         | 4.6909           | 1.0528         |

- 2) Concerning extrinsic goal orientation, the time effect was marginally not significant but we observed a significant time-school interaction  $F(5, 87)=2.363$ ,  $p=.046$ . This is due to the fact that there was a decrease at the extrinsic goal orientation for the students of some schools but the students of the rest schools did not seem to differentiate their attitude. The decrease at extrinsic goal orientation for EA was rather significant [ $t(20)=2.754$ ,  $p=.012$ ] and for VHS was marginally not significant. On the other hand, no significant between schools effect was observed.

**Table 6.16:** measures for extrinsic goal orientation

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.9167          | 1.6683         | 4.1349           | 1.4899         |
| JVK - Finland | 3.9559          | 1.4849         | 4.1618           | 1.4946         |
| VHS - Denmark | 5.3571          | .9184          | 4.6964           | 1.0705         |
| BGS - Austria | 4.2727          | .9582          | 4.0909           | 1.1741         |
| FVS - Germany | 4.0962          | 1.2851         | 4.3910           | 1.1634         |
| LHP - France  | 4.8088          | .9663          | 4.5147           | 1.2914         |
| Total         | 4.5968          | 1.3523         | 4.3244           | 1.3028         |

- 3) Concerning task value, the time effect was not significant but we observed a significant time-school interaction  $F(5, 87)=3.055$ ,  $p=.014$ . This is due to the fact that there was an increase at the task value for the students of some schools and a decrease for the students of the rest schools. The students of EA showed a significant decrease at task value [ $t(20)=2.888$ ,  $p=.009$ ]. The overall difference between schools was also significant  $F(5, 87)=5.632$ ,  $p<.0005$ .

**Table 6.17:** measures for task value

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.4810          | .9573          | 4.9683           | .9944          |
| JVK - Finland | 4.0196          | .8954          | 4.2843           | .8053          |
| VHS - Denmark | 5.0179          | .7325          | 5.1905           | .4972          |
| BGS - Austria | 4.6545          | .9635          | 4.3636           | .9364          |
| FVS - Germany | 4.5590          | .8917          | 4.4923           | .8665          |
| LHP - France  | 5.2608          | .6416          | 5.0098           | .6109          |
| Total         | 4.8772          | .9799          | 4.7462           | .8608          |

- 4) Concerning control of learning beliefs, no significant main effect or interaction was observed. The students of EA showed a slight difference in their beliefs concerning control of learning, but it was not significant.

**Table 6.18:** measures for beliefs concerning control of learning

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.5238          | 1.1317         | 5.1429           | 1.3752         |
| JVK - Finland | 4.6176          | .8250          | 4.7304           | 1.0162         |
| VHS - Denmark | 5.1131          | .8337          | 5.1905           | .9632          |
| BGS - Austria | 5.0606          | 1.3287         | 4.9773           | .8976          |
| FVS - Germany | 4.5769          | 1.1198         | 4.5962           | .9604          |
| LHP - France  | 5.1471          | .9884          | 5.0147           | 1.3272         |
| Total         | 5.0403          | 1.0677         | 4.9552           | 1.1317         |

- 5) Concerning self-efficacy for learning and performance, we observed a significant difference between schools  $F(5, 87)=7.145$ ,  $p<.0005$ , but no significant time effect or time-school interaction. Both at the pretest and at the posttest most of the students scored at about the middle of the measure scale.

**Table 6.19:** measures for self-efficacy for learning and performance

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.3452          | .7561          | 5.1828           | 1.0454         |
| JVK - Finland | 3.9265          | 1.0251         | 3.7500           | 1.0117         |
| VHS - Denmark | 4.8520          | .7308          | 4.9010           | .7005          |
| BGS - Austria | 4.0455          | .9425          | 4.2727           | .9267          |
| FVS - Germany | 4.8819          | 1.1011         | 4.8603           | 1.1435         |
| LHP - France  | 4.6891          | .6545          | 4.7941           | .9110          |
| Total         | 4.6732          | .9879          | 4.6547           | 1.0697         |

### 6.5.3 Collaborative learning

The purpose of this questionnaire was to gather information both about the students' collaboration and their attitude towards collaboration. The data of the «Collaboration test» was examined with a Mixed Factorial Analysis of Variance with

one dependent factor: «time» and one independent factor: «school». The analysis of the results showed no significant time effects overall for the schools as a whole. Some improvements were observed however, for some of the schools. For these differences, we conducted paired-sample t-tests to examine if they were significant. The German school (FVS) showed a significant improvement in three domains: in knowledge building culture (mean score at the pretest: 3.64 and at the posttest: 4.18,  $t(16)=3.194$ ,  $p=.006$ ), in school support for knowledge sharing (mean score at the pretest: 3.50 and at the posttest: 3.90,  $t(16)=2.562$ ,  $p=.021$ ), and in progressive problem solving (mean score at the pretest: 3.88 and at the posttest: 4.77,  $t(16)=3.165$ ,  $p=.006$ ). Some other schools also showed a significant improvement in some domains. For example, the Finnish school (JVK) showed a significant improvement in knowledge building culture (mean score at the pretest: 3.00 and at the posttest: 3.53,  $t(16)=2.127$ ,  $p=.049$ ). It also showed a slight improvement in peer learning (mean score at the pretest: 3.31 and at the posttest: 3.78) and in experienced knowledge sharing in a class (mean score at the pretest: 3.92 and at the posttest: 4.22), which however was not statistically significant. The Greek school (EA) showed a significant increase in trust in school (mean score at the pretest: 3.86 and at the posttest: 4.42,  $t(20)=2.112$ ,  $p=.048$ ). It also showed a slight improvement in peer learning (mean score at the pretest: 3.89 and at the posttest: 4.13), which was not statistically significant. Finally, the French school (LHP) showed a significant improvement in trust in school (mean score at the pretest: 3.29 and at the posttest: 4.18,  $t(16)=4.947$ ,  $p<.0005$ ). Some other schools also showed a slight, not significant difference, in some domains. For example, the Danish school (VHS) showed a slight increase at the scores of peer learning (mean score at the pretest: 3.69 and at the posttest: 3.97) and of knowledge building culture (mean score at the pretest: 3.69 and at the posttest: 4.11) and a decrease at the score of progressive problem solving (mean score at the pretest: 4.44 and at the posttest: 4.10). Also, the Austrian school (BGS) showed a slight increase at the score of progressive problem solving (mean score at the pretest: 4.20 and at the posttest: 4.53) and a decrease at the score of knowledge sharing in a class (mean score at the pretest: 4.37 and at the posttest: 3.70). The Mixed Factorial Analysis of Variance revealed that in most domains of questions there were either significant school differences or significant time-school interactions. More specific, for three scales (experienced knowledge sharing, knowledge building culture, and school support for knowledge sharing) significant differences were observed between schools. These differences seem to be related to the fact that in most domains of the collaboration questionnaire both in pre and posttest the schools EA – Greece and LHP – France had a higher score than the rest of the schools, while the school JVK – Finland showed a lower score in most cases.

We present in detail the results from the statistical analysis about each domain of questions.

- 1) Concerning peer learning, no significant main effect or interaction was observed. The students' performance was at about the middle of the measure scale both at the pretest and the posttest. However, the students of EA, JVK, and VHS showed a slight improvement, which was not significant.

**Table 6.20:** measures for peer learning

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 3.8889          | 1.4957         | 4.1270           | 1.1994         |
| JVK - Finland | 3.3137          | 1.1271         | 3.7843           | 1.0862         |
| VHS - Denmark | 3.6944          | .7844          | 3.9722           | 1.2509         |
| BGS - Austria | 4.2667          | 1.2780         | 4.2667           | .6412          |
| FVS - Germany | 3.8725          | .9638          | 3.9216           | 1.0037         |
| LHP - France  | 4.3137          | .8618          | 4.5294           | .9934          |
| Total         | 3.8521          | 1.1425         | 4.0861           | 1.0877         |

- 2) Concerning experienced knowledge sharing in a class, we observed a significant difference between schools  $F(5, 83)=3.966$ ,  $p=.003$ , but no significant time effect or time-school interaction. The students of JVK showed a slight improvement at this domain and the students of BGS showed a slight decrease, but it was not significant.

**Table 6.21:** measures for knowledge sharing in a class

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.5000          | 1.0124         | 4.3952           | .8257          |
| JVK - Finland | 3.9235          | .7928          | 4.2157           | .7518          |
| VHS - Denmark | 4.0972          | .6796          | 4.0028           | .9527          |
| BGS - Austria | 4.3667          | .8283          | 3.7000           | .3416          |
| FVS - Germany | 3.4745          | .7581          | 3.7059           | .5967          |
| LHP - France  | 4.3039          | .9076          | 4.5000           | .7862          |
| Total         | 4.0948          | .9068          | 4.1573           | .8031          |

- 3) Concerning knowledge building culture, the results were about the same. We observed a significant difference between schools  $F(5, 83)=4.220$ ,  $p=.002$ , but no significant time effect or time-school interaction. The students of JVK and FVS showed a significant improvement in this domain [ $t(16)=2.127$ ,  $p=.049$  for JVK and  $t(16)=3.194$ ,  $p=.006$  for FVS]. On the other hand, the improvement of VHS was not significant.

**Table 6.22:** measures for knowledge building culture

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.2540          | 1.3699         | 4.1032           | 1.0859         |
| JVK - Finland | 3.0000          | .6796          | 3.5294           | .7552          |
| VHS - Denmark | 3.6944          | .8464          | 4.1111           | .9248          |
| BGS - Austria | 3.8000          | .6498          | 3.9333           | .4346          |
| FVS - Germany | 3.6373          | .5145          | 4.1765           | .6884          |
| LHP - France  | 4.0784          | .8294          | 3.9216           | .8861          |
| Total         | 3.7622          | .9927          | 3.9644           | .8771          |

- 4) Concerning school support for knowledge sharing, the results were again about the same. We observed a significant difference between schools  $F(5, 83)=5.436$ ,  $p<.0005$ , but no significant time effect or time-school interaction. The students of FVS showed a significant improvement in this domain [ $t(16)=2.562$ ,  $p=.021$ ].

**Table 6.23:** measures for school support for knowledge sharing

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.7914          | 1.3901         | 4.7347           | 1.1197         |
| JVK - Finland | 3.6877          | 1.1100         | 3.7395           | .8795          |
| VHS - Denmark | 4.2976          | .7037          | 4.0595           | .7668          |
| BGS - Austria | 3.9429          | .4116          | 3.7143           | .6776          |
| FVS - Germany | 3.4958          | .6722          | 3.8992           | .5095          |
| LHP - France  | 4.5966          | 1.0741         | 4.1681           | .7990          |
| Total         | 4.1816          | 1.1357         | 4.1284           | .9061          |

- 5) Concerning trust in school, the time main effect was marginally not significant while there was a significant time-school interaction [ $F(5, 83)=2.576$ ,  $p=.032$ ]. These results are due to the fact that there is a rather significant improvement in the score of the students of some schools only, while the students of the rest of the schools had the same performance. The students of EA and LHP showed a significant improvement in this domain [ $t(20)=2.112$ ,  $p=.048$  for EA and  $t(16)=4.947$ ,  $p<.0005$  for LHP]. The between-schools effect was marginally not significant.

**Table 6.24:** measures for trust in school

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 3.8611          | 1.3363         | 4.4167           | 1.1894         |
| JVK - Finland | 4.3578          | .9546          | 4.1912           | .9037          |
| VHS - Denmark | 4.6875          | .6753          | 4.5833           | .9435          |
| BGS - Austria | 4.6500          | .8588          | 4.8500           | .5184          |
| FVS - Germany | 4.2892          | .7360          | 4.3284           | .9002          |
| LHP - France  | 3.2892          | .8069          | 4.1765           | 1.0561         |
| Total         | 4.0843          | 1.0504         | 4.3577           | .9884          |

- 6) Concerning progressive problem solving, no significant main effect or interaction was observed, although the students of most schools slightly improved their score at this domain. Only the improvement of FVS was significant [ $t(16)=3.165$ ,  $p=.006$ ]. Neither the increase at the score of BGS, nor the decrease at the score of VHS were statistically significant.

**Table 6.25:** measures for progressive problem solving

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.3016          | 1.2152         | 4.4603           | 1.3803         |
| JVK - Finland | 3.6373          | 1.0412         | 3.6667           | 1.0341         |
| VHS - Denmark | 4.4444          | .7154          | 4.0972           | .8302          |
| BGS - Austria | 4.2000          | 1.2605         | 4.5333           | .9888          |
| FVS - Germany | 3.8824          | .9926          | 4.7745           | .8436          |
| LHP - France  | 4.1569          | 1.0008         | 4.2157           | .9350          |
| Total         | 4.0805          | 1.0523         | 4.2772           | 1.0877         |

#### 6.5.4 Learning strategies

The purpose of this questionnaire was to gather information both about the students' cognitive and metacognitive strategies and their resource management strategies. The data of the «Learning strategies test» was examined with a Mixed Factorial Analysis of Variance with one dependent factor: «time» and one independent factor: «school». The analysis of the results showed that for most of the domains there is not a significant time effect overall for the schools as a whole. In particular, only «the effort regulation» domain is influenced by the project [ $F(1, 90)=7.326$ ,  $p=.008$ ]. Some improvements were observed however, for some of the schools. For these differences, we conducted paired-sample t-tests to examine if they were significant. The students of the Greek school (EA) showed a significant decrease in time and study environment (mean score at the pretest: 4.88 and at the posttest: 4.37,  $t(19)=2.585$ ,  $p=.018$ ) and in help seeking (mean score at the pretest: 4.38 and at the posttest: 3.84,  $t(19)=2.214$ ,  $p=.039$ ). The students of the Greek school also showed a slight improvement concerning peer learning (mean score at the pretest: 3.75 and at the posttest: 4.15) and a decrease at their score concerning rehearsal (mean score at the pretest: 5.00 and at the posttest: 4.50), which however were not significant. Some other schools also showed a significant difference in some domains. For example, the Danish school (VHS) showed a significant increase in time and study environment (mean score at the pretest: 4.24 and at the posttest: 4.89,  $t(16)=3.63$ ,  $p=.002$ ) and also some more differences, which however were not significant. For example, we observed a decrease in rehearsal (mean score at the pretest: 4.25 and at the posttest: 3.90), in critical thinking (mean score at the pretest: 4.28 and at the posttest: 3.84), and in peer learning (mean score at the pretest: 4.22 and at the posttest: 3.74), and also an increase in help seeking (mean score at the pretest: 4.40 and at the posttest: 4.75) which were not statistically significant. Finally, the students of the French school (LHP) showed a significant decrease in effort regulation (mean score at the pretest: 5.15 and at the posttest: 4.47,  $t(16)=3.144$ ,  $p=.006$ ). They also showed a slight, not significant, increase in peer learning (mean score at the pretest: 4.04 and at the posttest: 4.33). Some other schools showed a slight, not significant, difference in some domains. For example, the German school (FVS) showed a slight improvement in elaboration (mean score at the pretest: 4.26 and at the posttest: 4.56) and at the same time a decrease in peer learning (mean score at the pretest: 4.31 and at the posttest: 4.08) and in help seeking (mean score at the pretest: 4.65 and at the posttest: 4.38). The Finnish school (JVK) showed a slight, not significant improvement in elaboration (mean score at the pretest: 3.31 and at the posttest: 3.61) and in organization (mean score at the pretest: 3.28 and at the posttest: 3.54), while the Austrian school (BGS) showed a slight, not significant, decrease in effort regulation (mean score at the pretest: 4.70 and at the posttest: 4.29). The Mixed Factorial Analysis of Variance revealed that there were significant school differences in five domains, namely, «rehearsal», «elaboration», «organization», «critical thinking», and «metacognitive self-regulation». These five domains are all the domains that constitute the category “cognitive and metacognitive strategies”. The school differences seem to be related to the fact that in almost all measures concerning these domains both in pre and posttest the schools EA – Greece and LHP – France, showed a higher score concerning motivation than the rest of the schools, while the school JVK – Finland showed constantly a lower score. The analysis also revealed that there was a significant time-school interaction in time and study environment [ $F(5, 90)=5.391$ ,  $p<.0005$ ]. This is due to the fact that there was a different change

at the scores of the students of the various schools. The students of some schools showed a significant increase at their score (e.g., the students of the Danish school), while the students of the rest schools showed a decrease at their scores (e.g., the students of the Greek school).

We present in detail the results from the statistical analysis about each domain of questions.

- 1) Concerning rehearsal, we observed a significant difference between schools  $F(5, 90)=5.324$ ,  $p<.0005$ , but no significant time effect or time-school interaction. Both at the pretest and at the posttest the students scored at about the middle of the measure scale and there was no significant pretest-posttest difference for any school.

**Table 6.26:** measures for rehearsal

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 5.0042          | 1.0208         | 4.5042           | 1.2302         |
| JVK - Finland | 3.5294          | 1.1888         | 3.7647           | 1.2515         |
| VHS - Denmark | 4.2500          | .9354          | 3.8971           | 1.0572         |
| BGS - Austria | 4.6591          | 1.3336         | 4.5909           | .9372          |
| FVS - Germany | 3.7976          | 1.2595         | 3.8571           | 1.0594         |
| LHP - France  | 5.0245          | 1.2075         | 4.7500           | .8970          |
| Total         | 4.3976          | 1.2614         | 4.2248           | 1.1378         |

- 2) Concerning elaboration, we observed a significant difference between schools  $F(5, 90)=5.389$ ,  $p<.0005$ , but no significant time effect or time-school interaction. Both at the pretest and at the posttest the students scored at the middle of the measure scale and there was no significant pretest-posttest difference for any school.

**Table 6.27:** measures for elaboration

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.4917          | 1.1088         | 4.7083           | 1.0974         |
| JVK - Finland | 3.3098          | .9169          | 3.6078           | 1.0391         |
| VHS - Denmark | 4.4235          | .4596          | 4.5980           | .6899          |
| BGS - Austria | 4.4394          | .7648          | 4.2879           | .6150          |
| FVS - Germany | 4.2560          | 1.2483         | 4.5571           | .8410          |
| LHP - France  | 4.7157          | .8971          | 4.5882           | 1.1275         |
| Total         | 4.2696          | 1.0256         | 4.4024           | 1.0022         |

- 3) Concerning organization, there was a significant difference between schools  $F(5, 90)=6.224$ ,  $p<.0005$ , but no significant time effect or time-school interaction. Both at the pretest and at the posttest the students scored at the middle of the measure scale and there was no significant pretest-posttest difference for any school.

**Table 6.28:** measures for organization

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.9833          | 1.2341         | 4.9333           | 1.3933         |
| JVK - Finland | 3.2794          | .7649          | 3.5392           | 1.1957         |
| VHS - Denmark | 4.3088          | .9208          | 4.4118           | .8146          |
| BGS - Austria | 4.6818          | 1.0494         | 4.6591           | .8387          |
| FVS - Germany | 3.7500          | 1.0963         | 4.0000           | 1.1644         |
| LHP - France  | 4.6667          | .9247          | 4.5588           | 1.0366         |
| Total         | 4.2917          | 1.1578         | 4.3602           | 1.1866         |

- 4) Concerning critical thinking, we observed a significant difference between schools  $F(5, 90)=3.044$ ,  $p=.014$ , but no significant time effect or time-school interaction. Again, both at the pretest and at the posttest the students scored at the middle of the measure scale and there was no significant pretest-posttest difference for any school.

**Table 6.29:** measures for critical thinking

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.4300          | 1.1411         | 4.3867           | 1.1719         |
| JVK - Finland | 3.5882          | 1.0355         | 3.7088           | .9944          |
| VHS - Denmark | 4.2824          | .5525          | 3.8412           | 1.0350         |
| BGS - Austria | 4.3273          | .9177          | 4.5409           | .7787          |
| FVS - Germany | 4.4214          | 1.2141         | 4.5036           | .6990          |
| LHP - France  | 4.4000          | 1.0223         | 4.6235           | .8303          |
| Total         | 4.2365          | 1.0262         | 4.2467           | .9995          |

- 5) Concerning metacognitive self-regulation, there was a significant difference between schools  $F(5, 90)=8.016$ ,  $p<.0005$ , but no significant time effect or time-school interaction and there was no significant pretest-posttest difference for any school.

**Table 6.30:** measures for metacognitive self-regulation

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.4375          | .6737          | 4.3818           | .8374          |
| JVK - Finland | 3.5049          | .7123          | 3.7794           | .7756          |
| VHS - Denmark | 4.3761          | .4176          | 4.2161           | .5833          |
| BGS - Austria | 3.9649          | .7394          | 3.9718           | .6759          |
| FVS - Germany | 4.1314          | 1.1735         | 4.3268           | .8073          |
| LHP - France  | 5.0098          | .7878          | 4.9118           | .6431          |
| Total         | 4.2640          | .8833          | 4.2846           | .7977          |

- 6) Concerning time and study environment, we observed no significant time effect, but there was a significant time-school interaction [ $F(5, 90)=5.391$ ,  $p<.0005$ ], which indicates that the students of some schools were improved, while the students of some other school deteriorated. There was a significant decrease for the students of EA [ $t(19)=2.585$ ,  $p=.018$ ] and a significant improvement for the students of VHS [ $t(16)=3.63$ ,  $p=.002$ ]. On the other hand, no significant between-schools effect was observed.

**Table 6.31:** measures for time and study environment

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.8813          | 1.0923         | 4.3687           | .8853          |
| JVK - Finland | 4.6586          | .8596          | 4.4307           | .7712          |
| VHS - Denmark | 4.2447          | .5330          | 4.8866           | .8921          |
| BGS - Austria | 4.5536          | .6839          | 4.5000           | .6661          |
| FVS - Germany | 4.5476          | 1.0506         | 4.7768           | .8104          |
| LHP - France  | 5.1103          | 1.0086         | 5.0735           | .7422          |
| Total         | 4.6835          | .9288          | 4.6708           | .8320          |

- 7) Concerning effort regulation, we observed a significant time effect [ $F(1, 90)=7.326$ ,  $p=.008$ ] but no significant time-school interaction. This indicates that there was a similar change of attitude for the students of (almost) all the participating schools. This change was significant only for LHP [ $t(16)=3.144$ ,  $p=.006$ ]. On the other hand, no significant between-schools effect was observed.

**Table 6.32:** measures for effort regulation

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.3167          | 1.2872         | 4.1875           | 1.0094         |
| JVK - Finland | 4.2059          | .8805          | 4.0147           | .6642          |
| VHS - Denmark | 4.3971          | .6438          | 4.3382           | .6900          |
| BGS - Austria | 4.6970          | .7649          | 4.2879           | .9394          |
| FVS - Germany | 4.5000          | 1.2898         | 4.2976           | 1.1392         |
| LHP - France  | 5.1471          | .9231          | 4.4706           | .9956          |
| Total         | 4.5286          | 1.0332         | 4.2613           | .9038          |

- 8) Concerning peer learning, no significant main effect or interaction was observed, and there was no significant pretest-posttest difference for any school although the students of some schools scored better and the students of some other schools scored worse at the items of this domain.

**Table 6.33:** measures for peer learning

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 3.7500          | 1.3632         | 4.1500           | 1.4448         |
| JVK - Finland | 3.9608          | .9271          | 3.9412           | .8993          |
| VHS - Denmark | 4.2157          | .9424          | 3.7353           | .7242          |
| BGS - Austria | 4.2576          | .8211          | 4.3485           | .8578          |
| FVS - Germany | 4.3095          | .9288          | 4.0833           | 1.1524         |
| LHP - France  | 4.0392          | 1.4524         | 4.3333           | 1.3642         |
| Total         | 4.0608          | 1.1182         | 4.0851           | 1.1226         |

9) Concerning help seeking, no significant main effect or interaction was observed. The students of most schools seemed to have scored at the same level both at the pretest and at the posttest and only the students of EA showed a significant difference [ $t(19)=2.214$ ,  $p=.039$ ].

**Table 6.34:** measures for help seeking

| school        | Mean at pretest | Std. Deviation | Mean at posttest | Std. Deviation |
|---------------|-----------------|----------------|------------------|----------------|
| EA - Greece   | 4.3792          | .9814          | 3.8375           | .8203          |
| JVK - Finland | 4.1765          | .8650          | 4.1618           | .8924          |
| VHS - Denmark | 4.4020          | .8701          | 4.7451           | .9522          |
| BGS - Austria | 4.5000          | .6124          | 4.3636           | .8090          |
| FVS - Germany | 4.6548          | 1.0555         | 4.3750           | .7387          |
| LHP - France  | 4.6765          | .7540          | 4.4853           | 1.1056         |
| Total         | 4.4540          | .8742          | 4.3090           | .9285          |

Summarizing, the statistical analysis of this questionnaire shows that for most of the domains there is neither significant difference between the pre- and post-tests nor influence from schools. In particular, only «the effort regulation» domain is influenced by the project. Significant difference is also observed on the influence of the schools only for the «time and study environment» domain. Also, significant differences are observed between schools for five domains, namely, «rehearsal», «elaboration», «organization», «critical thinking», and «metacognitive self-regulation». We attribute this differentiation to cultural differences.

### 6.5.5 Technical skills

In the present, we analyze and discuss only a few questions, the most representatives of each part.

#### a) Description of the usage of ICT

The first part of questions refers to the possibility to use computers and related internet facilities at school and at home. The analysis of the results shows that, although the majority of the pupils already use computers at school (Question 1.2) at the beginning of the project, there is significant progress at the end of the project  $p=.013$ . Similar conclusions are obtained on the availability of internet connections (Question 2.2)  $p=.006$ . However, about the possibility to have

or not a private mail account at school (Question 4.2) there is no significant progress during the project, while we observed a significant difference between schools.

Concerning the engines used for searching information on the net (Question 7), Google revealed to be constantly the favorite search engine for the majority of the sample (more than 65%) very far from Yahoo which gains the second place (around 12%). The preference of students for media (Question 8) is not homogenous and does not seem to be influenced by the schools. However, at the end of the project the preference of students for internet is higher than at the beginning:  $F(1, 77)=12.156$ ;  $p=.001$  (see figure 6.1). The analogous results for TV and radio are not significant. These media are considered by students in the same way before and after the project.

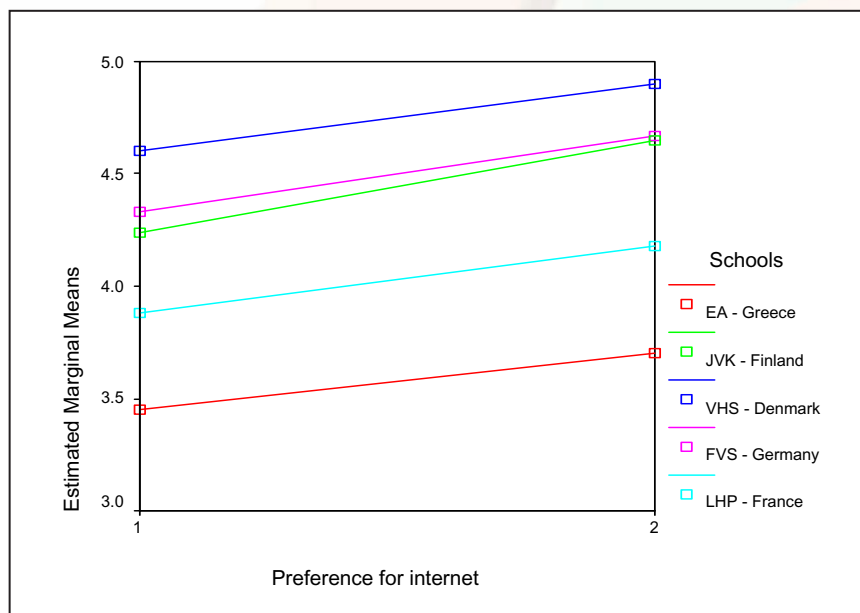


**Figure 6.1** The preference of students for internet at the pre- and post-test.

The group of questions 9.4, 9.8 and 9.14 are in the heart of the project and concern the use at school of software tools related to the treatment of images, i.e. digital image processing, multimedia and video authoring. Statistical analysis reveals that pupils are not familiar with such software packages and image related activities at the beginning of the project. Most of them declare that never or very rarely practiced such uses. Because of this “very low level starting point”, it was not surprising that the project strengthened and encouraged the interest and incited pupils to use images

for intellectual work  $F(1, 76)=5.077$ ;  $p=.027$  (figure 6.2). Also there is some interaction between schools and the use of such tools  $F(4, 76)=2.582$ ;  $p=.044$ . Similarly, there is a significant difference between schools  $F(4, 76)=5.41$ ;  $p=.001$ . Danish students seem to be the only ones not investigating intensively on image processing. The use of other office or educational tools (Microsoft office like packages, encyclopedias, programming languages etc.) and games do not seem to be affected by the project but this is natural since these tools are not in the heart of the project.

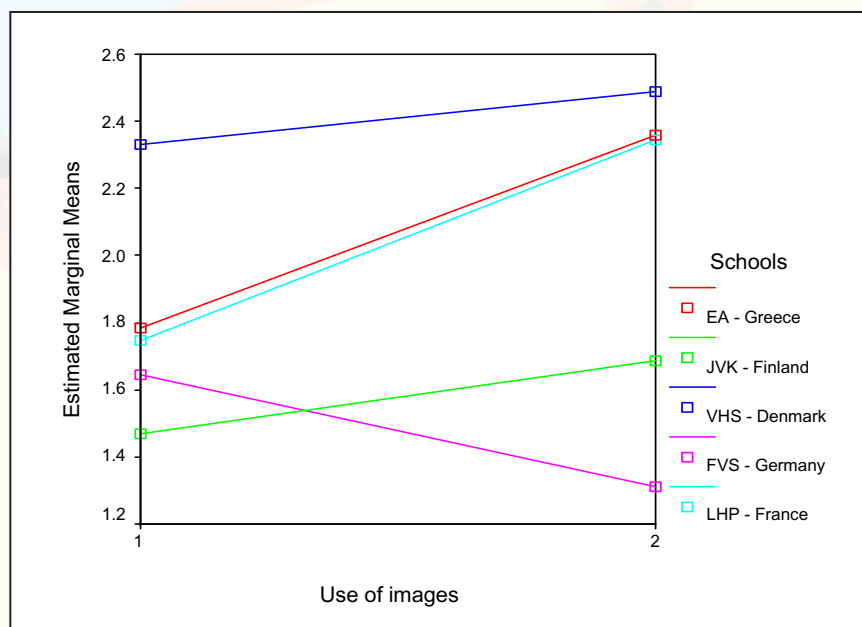


**Figure 6.2** Students' use at school of software tools related to the treatment of images (digital image processing, multimedia and video authoring), at the pre and post-test.

Question 10 refers to the use of computers during free time at school. The statistical analysis shows that students use computers in significantly different ways for accomplishing school related tasks, other purposes or web navigation  $F(1, 71)=10.78$ ;  $p=.002$ . Also schools use computers in different manners and this difference is significant  $F(4, 71)=8.05$ ;  $p<.0005$ . Finally during the project, students changed their way of using computers since there are significant differences between the pre- and the post-test  $F(1, 71)=4.63$ ;  $p=.035$ .

Questions 11 and 12 refer to the way students use computers at home and which are the activities for which they spend the most of their time. The conclusions of the statistical analysis are very similar to these obtained for the Questions 9 and 10 and thus are omitted.

### b) Mastery of ICT tasks

In this part we asked questions about the mastery of some basic image-related applications which lie on the main axis of the project. For all schools, we observed a significant progress during the project. More precisely, for the mastery of office applications (word processing, data bases etc.), i.e. questions 13.1 - 13.5, we obtained  $F(1, 77)=8.105$ ;  $p=.006$  (see figure 6.3).

For the mastery of techniques concerning communication on the net (questions 13.9, 13.14 and 13.15)  $F(1, 77)=10.747$ ;  $p=.002$  (see figure 6.4). Concerning the search of information on the net (Questions 13.10 - 13.13)  $F(1, 77)=18.443$ ;  $p<.0005$ . Editing and publishing web pages and related topics (Questions 13.7, 13.8 and 13.13)  $F(1, 77)=9.264$ ;  $p=.003$ . The mastery of digital image processing and multimedia techniques (Questions 13.16 and 13.17)  $F(1, 77)=13.767$ ;  $p<.0005$  (see figure 6.5).

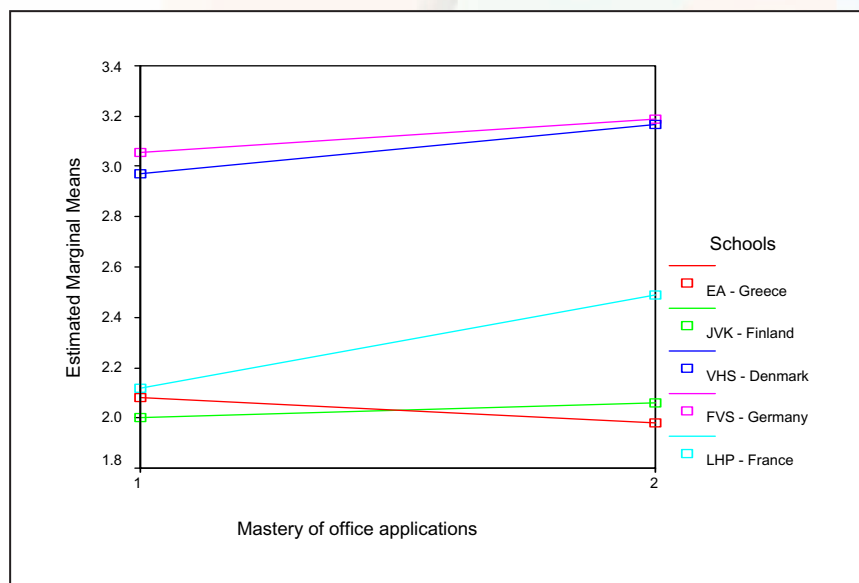


**Figure 6.3** The mastery by the students of basic office applications (word processing, excel, data bases etc.), at the pre- and post-test level.

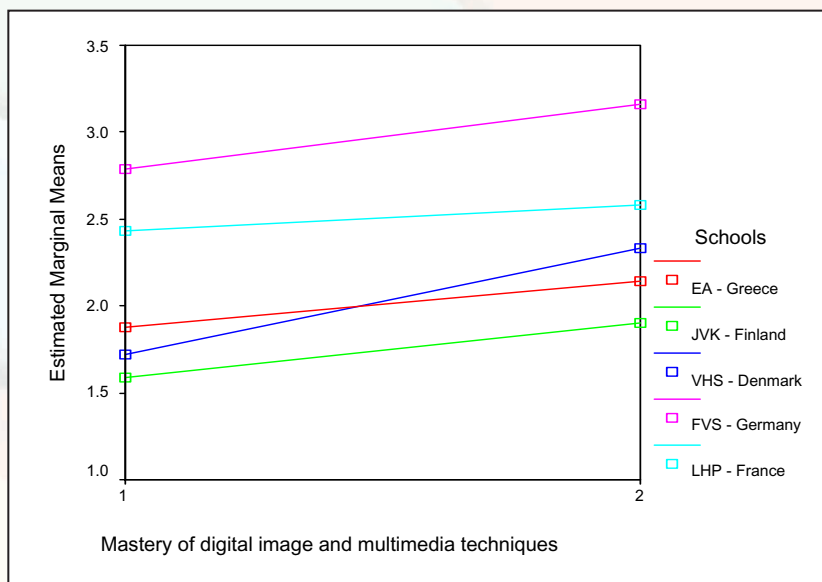


**Figure 6.4** The mastery by the students of digital image processing and multimedia techniques, at the pre- and post-test level.

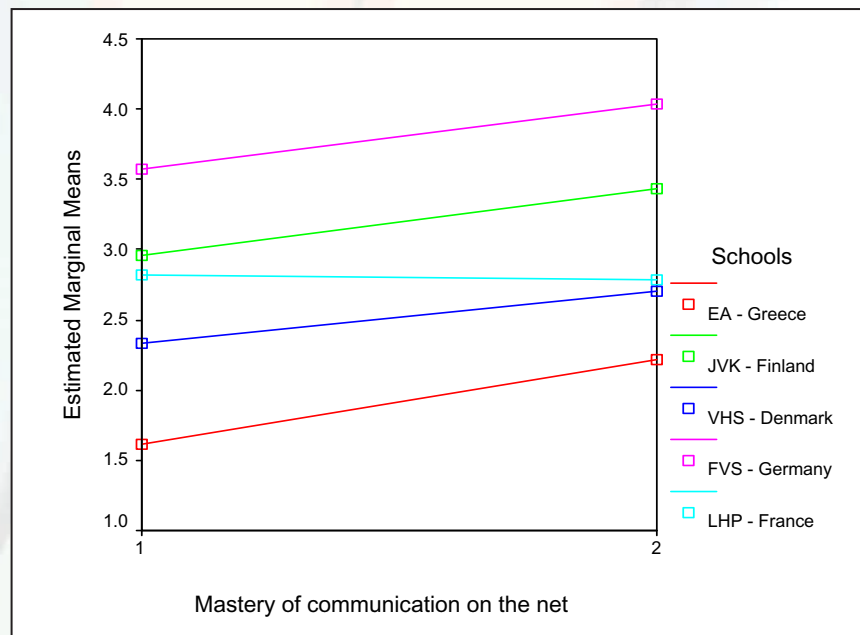


**Figure 6.5** The mastery by the students of techniques concerning communication on the net at the pre- and post-test level.

### c) Utility of the ICT

As a general observation we may say that students have no feeling about the utility of ICT and WebTV do not convince them that the use of new technologies may help them to achieve good results and related schoolwork purposes. For instance, we did not observe any significant differences neither between schools nor globally between the pre- and post-test level, concerning the statement «working with computers helps me to achieve more correct responses than I usually do» (Question 14.7). In a scale, ranging from 1 to 7 the mean value of each school is between 4 and 5 and this means that pupils have no clear opinion about the utility of computers for schoolwork. Similar conclusions hold for all other questions of this item covering diverse social and professional aspects.

### d) Effects to the persons and towards the relations with others

The high degree of collaboration and the international character of the project lead to the expectation that social attitudes should change towards a higher appreciation of teamwork as well as a higher degree of acceptance of knowledge about persons from foreign countries. In this sense, we first analysed together the questions 15.1, 15.2 and 15.3 enclosing the effects towards the adopting experts' role. The difference is significant  $F(1, 73)=5.265$ ;  $p=.025$ . Each student felt as an expert inside a group and played the role it was attributed to him (figure 6.6).

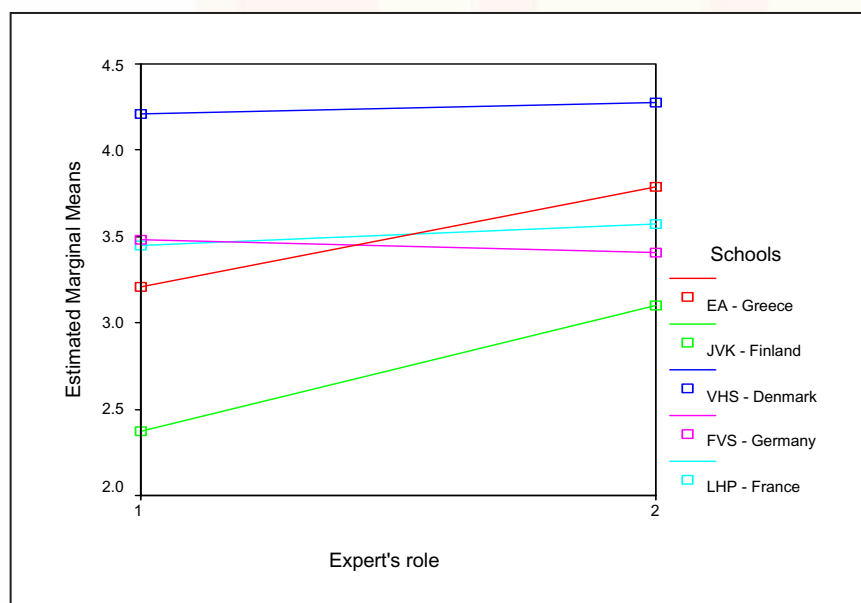


**Figure 6.6** Students' adopted experts' role at the pre- and post-test level.

For the effects towards the relations and the interactions between peoples (collaboration, isolation) covered by the remaining questions of the item 15 we did not observe any significant difference neither between schools nor between the pre- and post-test level.

## 6.6 Teachers' questionnaire

Seven teachers returned the questionnaire 7, which purpose was to gather teacher's experiences about the project that they carried out with their students.

### *Students' experiences*

While asking what worked well in the project, the most common answer was related to the increase of students' motivation and interest. Five out of seven teachers reported that their students were enthusiastic about WebTV activities, and interested in the topic. One teacher also mentioned interest, but related to the technological aspects of the project. One teacher described that collaborative work was the «best result» of the project since both the students and the teacher could learn from each other. Negative aspects, what did not work well, included issues related to technology, communication with other students (this was mentioned most), organization and structuring the task. One teacher mentioned that filling in the research questionnaires was too much of work.

It seems that even though the students got motivated and interested of doing WebTV activities, there were several constraints (technological, organizational, and structural) that could not have been solved during the project time.

The teachers were also asked to reflect on what students had learned during the project. Four teachers mentioned issues related to group work and collaboration, and three teachers mentioned that the students learnt to take more responsibility of their learning and work hard towards their goals. Learning about the technology was also mentioned four times. According the teachers, each student had an opportunity to test and practice their new knowledge, but two teachers said that not all of the students were willing to do that. One teacher reported that his/her students were not able to test and practice their new knowledge.

The teachers were also asked to what extend did pupils have more control of the learning process than they normally do? One teacher had a very negative answer: «Nothing – I don't believe that they have any control of their learning process.» On contrary, five teachers were very positive about students' own control; the control is bigger, they have more control in a very large extent. One teacher did not answer to this question.

Only one teacher was negative about the students' possibilities of implementing the new knowledge in the formal curriculum. All the others found the implementation as possible and even important issue.

*Teachers' experiences*

The teachers were also asked specifically reflect on their own contribution to the project. All the teachers were unanimous about the student-centered nature of the learning activities: the teachers contributed to the project by planning and structuring it, and providing support, especially, at the beginning of the project, but letting the students work themselves. The teachers felt, though, that you could always plan and coordinate more (two teachers), and three teachers said that next time curricular or academic constraints should be still considered more. Three teachers did not find anything bothering or difficult in this type of learning, two mentioned technical problems, and three management problems.

The teachers were also asked if they faced any problems with guidance, and how they solved these problems. Three teachers said that they had no problems related to guidance and helping of their students. Two teachers mentioned that motivating the students was a bit of problem, especially, when all of the wanted to do the same task. This was solved by discussion. Two teachers mentioned problems related to technology, and they organized a stand-in for to solve that problem, or talked with their colleagues.

The opinion about collaborative work was in general positive one: five teachers thought it is useful possibility to learn from each other, and «forces» students to commit. One teacher said that collaborative work is much too time demanding; one teacher did not clearly answer to this question. The teachers did not have any problems to collaborate with their students. All of them were relying on students' active role, and the teacher's role was only to support student collaboration. One teacher was negative about the collaboration in general. Two teachers felt that there was change in their collaboration with their students; they reported that they could collaborate more during WebTV activities than during normal curriculum-based lessons. Three teachers said that collaboration was longer this time, and one said that they already had high level of collaboration before the project. One teacher mentioned that he/she tried to be more background, just give support when it was needed. One teacher did not answer to this question.

Problems related to students' collaboration were usually minor, and solved during the project by discussing. The benefits of collaboration were clearly marked, such as, learning tolerance, and possibility to learn from each other.

The teachers were asked if the new way of teaching involved the use of different skills than the ones they use during the conventional lessons. Four teachers mentioned new technical skills, one international project, one students' self-organization and self-assertion, and one collaboration guiding for students.

According five teachers, the WebTV platform was easy to use. One teacher mentioned only technical problems related to the platform use, and one teacher did not answer to this question.

## Chapter 7

### 7.1 Conclusions

The present project indicated that collaborative movie making is a valuable pedagogical tool in European education. A large number of students from all over Europe participated in culturally-motivated WebTV activities and learned under guidance of their teachers how to make technologically sophisticated video-productions. Students were very motivated to jointly work for producing their movies and assumed various expert roles in their WebTV teams. It is especially noticeable that participants representing many countries, various types of schools as well as a wide variety of ages took productively part in WebTV project. The overall results of WebTV project are very encouraging; we recommend that corresponding activities will be supported in European education in the future.

As a start point, we observed that for almost all domains of questions, there are significant differences between schools. This is probably due to the specific cultural characteristics of each school and to the fact that the mean ages of participating students differ significantly between schools. However, a common characteristic is that all schools have Internet access and almost all students are familiarized with its use. Each student has his or her favorite site and search engine. Each individual spends time for Internet games, use of emails, chat, forums, discussions with other schools, visiting favourite sites or designing web pages. Students as well teachers are familiar with Internet services and have experience in using the web as an information source. They have a good idea on what sort of information may be found in the net and which specific information could be useful to improve their marks at school. They estimate that only a

small amount of information is really useful and that the great amount of information available acts as a background noise for the really valuable data.

Another point is that, although, pupils have already formed an opinion about the use of PC and of Internet, they reveal many difficulties to experiment tools (software, and hardware) concerning image or video processing and related productions. This is not so surprising, since students have a very good idea of Internet and they are already familiarised with its use. However, they have neither experience nor knowledge on the specific subject of video productions and related topics. In addition, schools do not touch directly such technical aspects of artistic flavour in their curriculum and therefore do not help pupils to form some opinion. For these reasons it is not surprising to see at the post-test analysis that the project interacts within this activity and that performances substantially increase for all schools in a symmetric manner. By the way, because of the very low starting level concerning most of the activities revealed by the pre-test analysis, the project does incite pupils to use such tools at home and at school for intellectual work and much progress was done until the end. Both students and teachers gain experience and insights in abundance, and this is true in manifold ways and with regards to a great variety of aspects. In this context, it should also be interesting to explore the different interacting factors and clearly further study has to be done at this point in the future.

Concerning the utility of ICT, pupils are convinced from the beginning that although computers are necessary for achieving any work, the use of computers does not increase their efficiency and this opinion does not change during the project. This is probably due to the fact that, because of the nature of the project, students consider their work rather as an artistic one than a realisation directly related to computers. They orient their efforts and spend their energy and time to think about the story and conceive the scenario, manipulate cameras for shooting and complete the montage and therefore, during this process, the use of PC plays a secondary and auxiliary role.

A last point concerns the effects to the persons, the collaborative work and the relations with others. The project capitalizes on the cognitive diversity of the students. It mainly contributes towards the role of each student, each individual to feel as an expert inside a group but it does not seem to influence collaborations in the strict sense of the term. It rather facilitates sharing of the corresponding knowledge and understanding. Being “the cameraman” or “the musician” of the team, the distribution of pre-determined roles, contributes towards such behaviour. Nevertheless, students are encouraged to provide and receive feedback of each other and engaged in corresponding discussions. They experience the fact that teaching and learning are no opposites but complementary activities decreasing the gap between teacher and student. They become aware that the exchange, the pooling of knowledge is more efficient as no individual can ever be omniscient. They become familiar with the idea that computers may be also used as tools for intellectual work and exchange of ideas and not only as a game machine or a source of entertainment in general.

The modern school needs to help students to develop new skills, such as critical thinking, self-reflection, metacognitive monitoring and collaboration. Projects like WebTV offer the possibility to teachers to consider the acquisition of knowledge as a research-like process of inquiry to be shared with his or her students. Students work on common goals, continuously communicate among themselves, are informed about the progress of the team they belong to and to

touch many multi-faced and complex reference domains in an interdisciplinary and authentic context. Obviously, such activities are helpful for facilitating cross-cultural communication and deeper understanding concerning how students coming from different countries study, live, and experience their world.

Careful evaluation is needed each time when technological changes are involved in order to measure from a psychological and educational point of view the impact of these changes and define some formal pedagogical directions to follow for the development of the content of the information highways. Globalization with its full and rapid social impacts needs educational tools, which can permit international contacts and provide authentic experiences already at the school level, but which, simultaneously, preserve and promote local particularities and enrich valuable cultural diversity.

## 7.2 Technical conclusions

At the beginning of WebTV for Schools project the Internet connectivity speeds and technology seemed promising in order to provide fast access with low cost in order to support the relatively demanding (in terms of system resources) WebTV for Schools platform.

But taking into account the geographical dispersion of the participating European countries / schools and the lack of homogeneity concerning fast Internet development it was anticipated that the potential of the WebTV for Schools platform would not be fully exploited (from a technological point of view). Only the last months we had in our disposal fast connections that take advantage of the WebTV for Schools platform capabilities.

A further exploitation of the project is going to be investigated after its' official ending in the framework of the project Rural Wings ([http://europa.eu.int/comm/research/headlines/news/article\\_04\\_12\\_15\\_en.html](http://europa.eu.int/comm/research/headlines/news/article_04_12_15_en.html)) starting on the first months of 2005. Rural Wings will develop an advanced learning platform through satellite DVB-RCS access technologies, promoting a **user-centred** methodological approach which constitutes its major innovation. The main aim of the project is to support the creation of a new culture in rural communities promoting digital literacy and reducing resistance to the use of new technologies. The WebTV for Schools project methodology / approach and WebTV for Schools platform can be further exploited by Rural Wings project as example of good practice. The platform will be integrated and adapted to be used from students of rural schools across Europe, Northern and Latin America and Africa. At the same time the broadband satellite communication technologies of Rural Wings can take full advantage of WebTV's potential.



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## Appendix A: The questionnaires

- School site description (questionnaire 1)
- Interest (questionnaire 2)
- Motivational beliefs (questionnaire 3)
- Collaborative learning (questionnaire 4)
- Learning strategies (questionnaire 5)
- Technical skills (questionnaire 6)
- Teacher's questionnaire (questionnaire 7)



## Questionnaire 1 – Information about the School Site

Please fill in the form and double click on the boxes to check them. When you finish send the word document by email as an attachment to the WebTV mailing list.

### A. Name and address

1. Name and address of site :
2. Web site (if one exists) :
3. Telephone :
4. Fax :
5. Name and title of lead site contact :  
    Phone :  
    E-mail address :

### B. Basic site description

6. Type of school (choose from the following alternatives):

- Elementary ☐
- Junior high school (Gymnasium) ☐
- High School (Lyceum) ☐
- Public ☐
- Private ☐
- Special populations ☐
- Special services ☐

7. Location of site (choose from the following alternatives):

- Urban ☐
- Inner-urban ☐
- Suburban ☐
- Small town ☐
- Rural ☐

8. Socio-economic status of parents (choose from the following alternatives):

- Low ☐
- Medium ☐
- High ☐

9. Number of students:

10. Approximate school budget:

11. Other significant resources received in the past two years (volunteers, corporate donations, etc.):

### **C. Staff**

12. Name and title of lead administrator:

Phone :

E-mail address :

13. Administrative structure:

Departments :

Special educational needs :

Arrangements :

Roles of staff :

14. Number of staff:

Regular :

Visiting :

15. Average number of hours spent teaching for teachers whose primary assignment is classroom teaching:

### **D. Academic schedule and performance**

16. Academic schedule:

Starting date :

Ending date :

17. Weekly schedule:

Number of days :

Number of hours :

18. Students' performance levels:

- Low ☐
- Medium ☐
- High ☐

### **E. Projects**

19. Has the school participated in innovated projects in the past?

- No ☐
- Yes ☐

If the answer at the above question is 'yes', please give more information about the projects.

20. Number of innovative projects that the school has participated

- Number of national projects :
- Number of international projects :

21. Please, write a short description of the projects.

### **F. ICT**

22. Brief description of the main technologies (ICT) used at the site:

23. Total number of WWW-usable computers:

24. Total number of other computers:

25. Locations of computers (choose from the following alternatives):

- Labs ☐
- Classrooms ☐
- Library ☐
- Other ☐

26. Are computers and the Internet accessible to students and teachers beyond class time?

- Yes ☐
- No ☐

27. Main uses of ICT in the curriculum:

28. Brief description of the ICT technical and pedagogical support provided to students, teachers, and administrators:

**Questionnaire 2****1. GENERAL**

- 1a. Name: .....
- 1b. Age: .....
- 1c. Sex:                      male    female
- 1d. Class: .....
- 1e. School (country): ..... (.....)

**2. PRE-EXPECTATIONS**

2a. Why are you interested in joining the Web TV project?

.....

.....

.....

2b. What do you expect to get out of the Web TV project?

.....

.....

.....

**3. INTERNATIONAL COMMUNICATION**

3a. Have you participated in a European project in the past? (A project is considered European when more than one European countries are involved)

.....

.....

.....



3b. Did you have in the past (or have in the present) a temporary or permanent contact with students abroad?

.....

If yes:

3bi. What were/are the means of communication?

.....

3bii. What was/is the communication about (content)?

.....

.....

Read each statement carefully and decide how well it describes Your thoughts about working for the Web TV project. Use the scale provided to indicate how much you agree (or disagree) with the statement (**1 means “I totally disagree” and 7 “I totally agree”**).

Circle only one option! There are no right or wrong answers –just **your own opinion!**

|                                                                             | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |
|-----------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Working with tasks like the Web TV project is not interesting for me.    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Collaboration with other students is interesting.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. I feel under pressure to do this task well.                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. It would be embarrassing to fail at this task.                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. I like doing these kinds of tasks, like the ones for the Web TV project. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Working with technology is interesting.                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Collaborative work interests me a lot.                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. I enjoy working with technology.                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. This task seems to be very interesting to me.                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. I don't like using technology.                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

11. When I think about the task, I feel somewhat concerned.
12. I enjoy collaboration.
13. I am not interested in tasks like this.
14. I am not interested in sharing my work with my fellow students.
15. Technology is very interesting to me.
16. I feel petrified by the demands of this task.
17. I am not interested in using technology.
18. I enjoy working on tasks like this.
19. I'm afraid I will make a fool out of myself.
20. I don't like to collaborate with other students.

|                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

***Thank you very much for your help!***

### Questionnaire 3

Name: \_\_\_\_\_ Girl ☐ Boy ☐  
 School: \_\_\_\_\_ Age: \_\_\_\_\_ Class: \_\_\_\_\_

Dear Student,

Please rate the following items based on your behavior in your class. Your rating should be on a 7-point scale where **1 means 'not at all true of me' and 7 means 'very true of me'**.

Circle only one option! There are no right or wrong answers –just **your own opinion!**

- |                                                                                                                                                   | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. In a class, I prefer course material that really challenges me so I can learn new things.                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. If I study in appropriate ways, then I will be able to learn the material in a course.                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. I want to do well in a class because it is important to show my ability to my family, friends, or others.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. I think I will be able to use what I learn in a course in other courses.                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. I believe I will receive an excellent grade in the courses.                                                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. I'm certain I can understand the most difficult material presented in the reading for a course.                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Getting a good grade in a class is the most satisfying thing for me right now.                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Understanding the subject matter of a course is very important to me.                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. It is my own fault if I don't learn the material in a course.                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. It is important for me to learn the course material in a class.                                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. The most important thing for me right now is improving my overall grade point average, so my main concern in a class is getting a good grade. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. I'm confident I can learn the basic concepts taught in a course.                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. If I can, I want to get better grades in a class than most the other students.                                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

14. I'm certain I can master the skills being taught in a class. ☐ ☐ ☐ ☐ ☐ ☐ ☐
15. I'm confident I can understand the most complex material presented by the instructor in a course. ☐ ☐ ☐ ☐ ☐ ☐ ☐
16. In a class, I prefer course material that arouses my curiosity, even if it is difficult to learn. ☐ ☐ ☐ ☐ ☐ ☐ ☐
17. I am very interested in the content area of the courses. ☐ ☐ ☐ ☐ ☐ ☐ ☐
18. If I try hard enough, then I will understand the course material. ☐ ☐ ☐ ☐ ☐ ☐ ☐
19. Considering the difficulty of the courses, the teacher, and my skills, I think I will do well in the courses. ☐ ☐ ☐ ☐ ☐ ☐ ☐
20. I'm confident I can do an excellent job on the assignments and tests in a course. ☐ ☐ ☐ ☐ ☐ ☐ ☐
21. I expect to do well in the courses. ☐ ☐ ☐ ☐ ☐ ☐ ☐
22. The most satisfying thing for me in a course is trying to understand the content as thoroughly as possible. ☐ ☐ ☐ ☐ ☐ ☐ ☐
23. I think the course material in the classes is useful for me to learn. ☐ ☐ ☐ ☐ ☐ ☐ ☐
24. When I have the opportunity in a class, I choose course assignments that I can learn from even if they don't guarantee a good grade. ☐ ☐ ☐ ☐ ☐ ☐ ☐
25. If I don't understand the course material, it is because I didn't try hard enough. ☐ ☐ ☐ ☐ ☐ ☐ ☐
26. I like the subject matter of the courses. ☐ ☐ ☐ ☐ ☐ ☐ ☐

***Thank you very much for your help!***

## Questionnaire 4

Name: \_\_\_\_\_ Girl Boy

School: \_\_\_\_\_ Age: \_\_\_\_\_ Class: \_\_\_\_\_

Dear student,

When answering the following questions, we would like to ask you to think of your class and your relationship with your fellow students.

Assess the following statements according to your own personal opinion of how often those things are present in your class.

| 1     | 2      | 3         | 4           | 5          | 6             | 7      |
|-------|--------|-----------|-------------|------------|---------------|--------|
| Never | Seldom | Sometimes | Quite often | Frequently | Almost always | Always |

- |                                                                                                                            | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |
|----------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. I have learned many valuable things from my fellow students.                                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. I have produced ideas that my classmates have used.                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. When studying, I often try to explain the material to a classmate or a friend.                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. One is able to criticize in my school without being afraid.                                                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. I frequently try to discover new ways of advancing my work.                                                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. I often notice that my fellow students refer to ideas that we have developed together.                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. I very often notice that discussion with my fellow students helps me see things more clearly and from new perspectives. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Student's diverse competencies are valued in my school.                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Competition between students makes knowledge sharing difficult in my school.                                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

10. I get into a great deal of trouble in order to transmit my experiences to my fellow students. ☐ ☐ ☐ ☐ ☐ ☐ ☐
11. In our school, we are encouraged to create ideas together. ☐ ☐ ☐ ☐ ☐ ☐ ☐
12. I try to work with other students from my class to complete the course assignments. ☐ ☐ ☐ ☐ ☐ ☐ ☐
13. I often try to find new solutions for old problems. ☐ ☐ ☐ ☐ ☐ ☐ ☐
14. Discussion with my fellow students helps me solve more complicated problems than otherwise would be possible. ☐ ☐ ☐ ☐ ☐ ☐ ☐
15. Teams, in my school, are set up to represent diverse kinds of expertise. ☐ ☐ ☐ ☐ ☐ ☐ ☐
16. I am treated fairly in my school. ☐ ☐ ☐ ☐ ☐ ☐ ☐
17. Our teachers show by their example of open communication how profitable it is to share knowledge. ☐ ☐ ☐ ☐ ☐ ☐ ☐
18. I have noticed at my school that it is much more effective to develop solutions together than to do it alone. ☐ ☐ ☐ ☐ ☐ ☐ ☐
19. When studying, I often set aside time to discuss course material with a group of students from the class. ☐ ☐ ☐ ☐ ☐ ☐ ☐
20. Collaboration across classes and work groups is actively supported in my school. ☐ ☐ ☐ ☐ ☐ ☐ ☐
21. I think that it is very inspiring to get a very demanding and complex problem to solve. ☐ ☐ ☐ ☐ ☐ ☐ ☐
22. Persons who guide and assist others are greatly valued in my school. ☐ ☐ ☐ ☐ ☐ ☐ ☐
23. People in my school are engaged in developing new ideas together. ☐ ☐ ☐ ☐ ☐ ☐ ☐
24. I am able to openly express my thoughts in my school. ☐ ☐ ☐ ☐ ☐ ☐ ☐
25. I believe that persons at my team are ready to teach me everything that they are able to. ☐ ☐ ☐ ☐ ☐ ☐ ☐
26. It is very important for the management of my school to organize joint events for students. ☐ ☐ ☐ ☐ ☐ ☐ ☐

***Thank you very much for your help!***

## Questionnaire 5

Name: \_\_\_\_\_ Girl ☐ Boy ☐

School: \_\_\_\_\_ Age: \_\_\_\_\_ Class: \_\_\_\_\_

Dear Student,

Please rate the following items based on your behavior in your class. Your rating should be on a 7-point scale where **1 means 'not at all true of me' and 7 means 'very true of me'**.

Circle only one option! There are no right or wrong answers –just **your own opinion!**

- |                                                                                                                       | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. When I study the readings for a course, I outline the material to help me organize my thoughts.                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. During class time I often miss important points because I'm thinking of other things.                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. When studying for a course, I often try to explain the material to a classmate or a friend.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. I usually study in a place where I can concentrate on my course work.                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. When reading for a course, I make up questions to help focus my reading.                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. I often feel so lazy or bored when I study for a class that I quit before I finish what I planned to do.           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. I often find myself questioning things I read or hear in a class to decide if I find them convincing.              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. When I study for a class, I practice saying the material to myself over and over.                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Even if I have trouble learning the material in a class, I try to do the work on my own, without help from anyone. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

10. When I become confused about something I'm reading for a class, I go back and try to figure it out. ☐ ☐ ☐ ☐ ☐ ☐ ☐
11. When I study for a course, I go through the readings and my class notes and try to find the most important ideas. ☐ ☐ ☐ ☐ ☐ ☐ ☐
12. I make good use of my study time. ☐ ☐ ☐ ☐ ☐ ☐ ☐
13. If course readings are difficult to understand, I change the way I read the material. ☐ ☐ ☐ ☐ ☐ ☐ ☐
14. I try to work with other students to complete the course assignments. ☐ ☐ ☐ ☐ ☐ ☐ ☐
15. When studying for a course, I read my class notes and the course readings over and over again. ☐ ☐ ☐ ☐ ☐ ☐ ☐
16. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence. ☐ ☐ ☐ ☐ ☐ ☐ ☐
17. I work hard to do well in a class even if I don't like what we are doing. ☐ ☐ ☐ ☐ ☐ ☐ ☐
18. I make simple charts, diagrams, or tables to help me organize course material. ☐ ☐ ☐ ☐ ☐ ☐ ☐
19. When studying for a course, I often set aside time to discuss course material with my fellow students. ☐ ☐ ☐ ☐ ☐ ☐ ☐
20. I treat the course material as a starting point and try to develop my own ideas about it. ☐ ☐ ☐ ☐ ☐ ☐ ☐
21. I find it hard to stick to a study schedule. ☐ ☐ ☐ ☐ ☐ ☐ ☐
22. When I study for a class, I pull together information from different sources, such as lectures, readings, and discussions. ☐ ☐ ☐ ☐ ☐ ☐ ☐
23. Before I study new course material thoroughly, I often skim it to see how it is organized. ☐ ☐ ☐ ☐ ☐ ☐ ☐
24. I ask myself questions to make sure I understand the material I have been studying in a class. ☐ ☐ ☐ ☐ ☐ ☐ ☐
25. I try to change the way I study in order to fit the course requirements and the instructor's teaching style. ☐ ☐ ☐ ☐ ☐ ☐ ☐
26. I often find that I have been reading for a class but don't know what it was all about. ☐ ☐ ☐ ☐ ☐ ☐ ☐
27. I ask the instructor to clarify concepts I don't understand well. ☐ ☐ ☐ ☐ ☐ ☐ ☐

28. I memorize key words to remind me of important concepts in a class. ☐ ☐ ☐ ☐ ☐ ☐ ☐
29. When class work is difficult, I give up or only study the easy parts. ☐ ☐ ☐ ☐ ☐ ☐ ☐
30. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying. ☐ ☐ ☐ ☐ ☐ ☐ ☐
31. I try to relate ideas in a subject to those in other courses whenever possible. ☐ ☐ ☐ ☐ ☐ ☐ ☐
32. When I study for a course, I go over my class notes and make an outline of important concepts. ☐ ☐ ☐ ☐ ☐ ☐ ☐
33. When reading for a class, I try to relate the material to what I already know. ☐ ☐ ☐ ☐ ☐ ☐ ☐
34. I have a regular place set aside for studying. ☐ ☐ ☐ ☐ ☐ ☐ ☐
35. I try to play around with ideas of my own related to what I am learning in a class. ☐ ☐ ☐ ☐ ☐ ☐ ☐
36. When I study for a course, I write brief summaries of the main ideas from the readings and my class notes. ☐ ☐ ☐ ☐ ☐ ☐ ☐
37. When I can't understand the material in a course, I ask another student for help. ☐ ☐ ☐ ☐ ☐ ☐ ☐
38. I try to understand the material in a class by making connections between the readings and the concepts from the lectures. ☐ ☐ ☐ ☐ ☐ ☐ ☐
39. I make sure that I keep up with the weekly readings and assignments for a class. ☐ ☐ ☐ ☐ ☐ ☐ ☐
40. Whenever I read or hear an assertion or conclusion in a class, I think about possible alternatives. ☐ ☐ ☐ ☐ ☐ ☐ ☐
41. I make lists of important items for a course and memorize the lists. ☐ ☐ ☐ ☐ ☐ ☐ ☐
42. I attend courses regularly. ☐ ☐ ☐ ☐ ☐ ☐ ☐
43. Even when course materials are dull and uninteresting, I manage to keep working until I finish. ☐ ☐ ☐ ☐ ☐ ☐ ☐
44. I try to identify students whom I can ask for help if necessary. ☐ ☐ ☐ ☐ ☐ ☐ ☐
45. When studying for a class, I try to determine which concepts I don't understand well. ☐ ☐ ☐ ☐ ☐ ☐ ☐
46. I often find that I don't spend very much time on a course because of other activities. ☐ ☐ ☐ ☐ ☐ ☐ ☐

47. When I study for a class, I set goals for myself in order to direct my activities in each study period. ☐ ☐ ☐ ☐ ☐ ☐ ☐
48. If I get confused taking notes in class, I make sure I sort it out afterwards. ☐ ☐ ☐ ☐ ☐ ☐ ☐
49. I rarely find time to review my notes or readings before an exam. ☐ ☐ ☐ ☐ ☐ ☐ ☐
50. I try to apply ideas from course readings in other class activities such as lecture and discussion. ☐ ☐ ☐ ☐ ☐ ☐ ☐

***Thank you very much for your help!***

## Questionnaire 6

Dear student!

The purpose of this questionnaire is to gather some information about your thoughts about the use of ICT. Please, answer all the questions presented below, because forms filled incompletely can cause problems when analysing the results.

**Name** \_\_\_\_\_ **Age** \_\_\_\_\_

**Sex:** Boy ☐ Girl ☐

**School** \_\_\_\_\_ **Class** \_\_\_\_\_

### A. Description of the usage of ICT (frequency, duration, contents)

1. Do you have a possibility to use a computer (mark every alternative)?

- |                    | Yes                      | No                                     |
|--------------------|--------------------------|----------------------------------------|
| 1.1 At home.....   | <input type="checkbox"/> | <input type="checkbox"/>               |
| 1.2 At school..... | <input type="checkbox"/> | <input type="checkbox"/>               |
| 1.3 Elsewhere....  | <input type="checkbox"/> | <input type="checkbox"/> where ? _____ |

2. Do you have a possibility to use the Internet connection? (mark every alternative)

- |                       | Yes                      | No                                     |
|-----------------------|--------------------------|----------------------------------------|
| 2.1 At home...        | <input type="checkbox"/> | <input type="checkbox"/>               |
| 2.2 In my school..... | <input type="checkbox"/> | <input type="checkbox"/>               |
| 2.3 Elsewhere         | <input type="checkbox"/> | <input type="checkbox"/> where ? _____ |

3. If you have a connection at home, what type of connection do you have?

4. Do you have a private email? (mark every alternative)

|                       | Yes                      | No                       |               |
|-----------------------|--------------------------|--------------------------|---------------|
| 4.1 At home...        | <input type="checkbox"/> | <input type="checkbox"/> |               |
| 4.2 In my school..... | <input type="checkbox"/> | <input type="checkbox"/> |               |
| 4.3 Elsewhere         | <input type="checkbox"/> | <input type="checkbox"/> | where ? _____ |

|                                     | Yes                      | No                       |
|-------------------------------------|--------------------------|--------------------------|
| 5. Do you have a personal web page? | <input type="checkbox"/> | <input type="checkbox"/> |

6. Which is your favorite web site?

7. Which is your favorite search engine (Lycos, Yahoo, etc.)?

| 8. What kind of media do you prefer to use? | Not at all               | Rarely                   | Monthly                  | Weekly                   | Daily                    |
|---------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 8.1. TV                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.2. Radio                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.3. Internet                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.4. Magazines                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.5. Others                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

9. What activities do you use computers for at school?

What programs do you use during your lessons at school?

|                                                               | Not at all               | Rarely                   | Monthly                  | Weekly                   | Daily                    |
|---------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 9.1. Word-processing                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.2. Spreadsheet (e.g., Excel)                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.3. Drawing and graphics                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.4. Digital image processing (working with digital photos)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.5. CD-ROM-based encyclopedias (e.g. Encarta)                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.6. Programming languages                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.7. Educational programs (e.g. language, mathematics)        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.8. Multimedia or video authoring                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.9. Games                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.10. E-mail                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.11. Chat                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.12. Web forum                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.13. Searching information from the Internet                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.14. Publishing pictures, texts, and reports in the Internet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.15. Downloading material from the Internet                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.16. Uploading material to the Internet                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 10. Use of computers during free time at school.

|                                                                                                                                | Yes                      | No                       | I don't know             |                          |                          |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 10.1 Are pupils allowed to use school's computers outside official school lessons?                                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|                                                                                                                                | Not at all               | Less than 1 hour         | 1-2 hours                | 3-5 hours                | More than 6 hours        |
| 10.2 I use a computer daily for school related tasks during my free time                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.3 I use a computer daily during my free time for other purposes than for school related tasks (i.e., recreational purposes) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10.4 Navigate in the web                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## 11. What activities do you use computers for at home?

|                                                             | Not at all               | Rarely                   | Monthly                  | Weekly                   | Daily                    |
|-------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 11.1 Word-processing                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.2 Spreadsheet (e.g., Excel)                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.3 Drawing and graphics                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.4 Digital image processing (working with digital photos) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.5 CD-ROM-based encyclopedias (e.g. Encarta)              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.6 Programming languages                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.7 Educational programs (e.g. language, mathematics)      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.8 Multimedia or video authoring                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



|                                                               |                          |                          |                          |                          |                          |
|---------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 11.9 Games                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.10 E-mail                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.11 Chat                                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.12 Web forum                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.13 Searching information from the Internet                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.14 Publishing pictures, texts, and reports in the Internet | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.15 Downloading material from the Internet                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11.16 Uploading material to the Internet                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12. How often do you use computers at home for the following purposes?

|                                                                                                                       | Not at<br>all            | Less<br>than 1<br>hour   | 1-2<br>hours             | 3-5<br>hours             | More than<br>6 hours     |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 12.1 I use a computer at home daily for school related tasks                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12.2 I use a computer at home daily for other purposes than<br>for school related tasks (i.e., recreational purposes) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12.3 Navigate in the web                                                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**B. Mastery of ICT tasks**

13. How well do you master some essential ICT (computer) applications?

|                                                                                               | Not at all               | Rather weakly            | Neither weakly nor well  | Rather well              | Very well                |
|-----------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 13.1 File management (operating system, finding files, copying, deleting)                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.2 Word-processing                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.3 Spreadsheet (e.g. Works spreadsheet, Excel)                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.4 Database (e.g. Works database-program, Access)                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.5 Drawing and graphics programs...                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.6 Digital image processing (e.g. scanning, manipulating digital photos)                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.7 Desktop publishing (PageMaker, First Publisher)                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.8 Programming tools or application generators (e.g. C + +, Java, Toolbook, Hyperstudio)... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.9 E-mail                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.10 Searching information from the Internet                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.11 Downloading material from the Internet...                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.12 Uploading material to the Internet...                                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.13 Making and publishing WWW and home pages                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.14 Phoning via Internet.....                                                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.15 Video conferencing.....                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.16 Digital voice manipulation or music composition                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13.17 Multimedia or video authoring                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### C. Utility of the ICT

14. How much do you agree with the following statements? (1 – I totally disagree, 7 – I totally agree)

|                                                                                           | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |
|-------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 14.1 In our days mastery of computers is very important for professional life             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.2 Mastery of computers is very important to follow in our social life                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.3 We can succeed in professional life without mastery of computers                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.4 I always use ICT in order to do my schoolwork.                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.5 In our class we are not sufficiently encouraged to use ICT in our schoolwork.        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.6 I rarely use ICT for my schoolwork.                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.7 Working with computers helps me to achieve more correct responses than I usually do. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.8 In order to achieve good results with computers I have to study very hard            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.9 It is very easy for me to prepare a task with ICT.                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.10 The use of computers does not change the quality of my work.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.11 In order to learn a task with computers I am ready to put a lot of effort.          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.12 If I cannot use the computers in my work, I give up easily.                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14.13 It is very important for me to know how to use computers well.                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**D. Effects to the persons and towards the relations with others**

15. How much do you agree with the following statements? (1 – I totally disagree, 7 – I totally agree)

|                                                                                       | 1                        | 2                        | 3                        | 4                        | 5                        | 6                        | 7                        |
|---------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 15.1 I often help my classmates to achieve a task with computer                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15.2 I often help my teachers to achieve a task with computer                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15.3 I like to work with computers outside school                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15.4 The use of computers socially isolates people from each other.                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15.5 The use of computers strongly involves collaborative activity.                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15.6 I think it is much nicer to use computers together with other people than alone. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15.7 I think it is nice that I can share my work with others via computers.           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**E. Acquisition of technical skills**

16. Identify the correct order (write 1 to 5) to the subject «write a scenario in order to shoot a movie for internet»:

|  |                                      |
|--|--------------------------------------|
|  | Shooting                             |
|  | imagine the story                    |
|  | find a title                         |
|  | find documentations about the story  |
|  | list intermediate targets to achieve |

17. Identify the correct order (write 1 to 5) to the subject «create a movie for internet» :

|  |                                          |
|--|------------------------------------------|
|  | electronic compression                   |
|  | imagine the story and write the scenario |
|  | shooting                                 |
|  | montage                                  |
|  | uploading                                |

18. What do you think is essential when making WebTV productions ?

## Questionnaire 7

## Teachers' reflections

*The purpose of this reflection note/ diary is to get information about the participating teachers' experiences about the project that they have carried out with their students.*

1. What worked well in the project? Why?
2. What did not work well? Why not?
3. What did the students learn in this project? What is the importance of these things that students learnt?
4. Did the project give each pupil the opportunity for testing and practicing new knowledge? How was this done?
5. Can the students implement the new knowledge in the formal curriculum?
6. How did you contribute to the activities of WebTV project? How should a teacher participate in general in your opinion?
7. What things bother you in this kind of learning activity? What feels difficult?
8. What did you learn while carrying out this project? What would you do differently next time?
9. What kind of problems did you have in guiding and helping students? Why?
10. How did you resolve the problems of guidance? Can you tell some examples?
11. Was it useful to use the WebTV platform? Why? Were there any problems in using it? If YES: What were they?
12. What is your opinion about collaborative work? What is essential in it (what makes it work, what interests you in it)?
13. How did the collaboration between the students succeed in this project? Was there any benefit of the collaboration? If so, can you explain exactly what?
14. How was your collaboration with your students?
15. Did something change in your collaboration with your students? Did you collaborate more than usually?
16. Did this new way of teaching involve the use of different skills than the ones you use in a conventional lesson? Which ones?
17. To what extent did pupils have more control of the learning process than they normally do?



## Appendix B: CD-ROM

*WebTV for Schools videos*

