

User's Manual and Help-file;
Project- and problem-based e-Work learning;

"How can we collaborate on e-Work projects?"



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E-Working on the platform

Nowadays, the Internet is an integral part of everyday life. Companies and the economy use it with increasing frequency, and many jobs cannot be done without it. It is a tool for performing tasks and creating products more easily and faster than ever before. Education and training need, therefore, to follow the demands made by the outside world on schools, teaching apprentices and students to use and understand the benefits of the networks. How can we use them properly and effectively to increase students' abilities to work in society? How can we best employ use the new technology and programs? Should I personally change my traditional working methods and collaborate more on the Internet?

Problems and questions such as these were all discovered in the course of our collaboration on the PLIME project. The answers and solutions are the opinions of the project members and they aim to provide our views and guidance for starting a new e-work project at other schools and departments.

1 How to start a project

1.1 How can I find partners?

The EU Lifelong Learning Programs provide a basis for cooperation within the EU. They offer money and help to implement projects, and their partner databanks are a good way to start in the search for a partner. Using "search engines" you can use different Learning Programs (Leonardo, Comenius etc.) and list potential partners.

National EU-program agencies organize "meeting seminars" where several candidates are looking for partners and these are very good place to meet possible partners. Another good way is to use national or international "partner networks" and ask them for help in finding a suitable partner. When a potential partner has been located, one should then make a preparatory visit to his/her school if at all possible. The national agencies running the programs will provide funding for such visits and also professional help throughout the project.

Make a presentation about the project idea and the overall tasks that the project intends to work on, including their methodology. Discuss the project with your partner candidates, and when a common understanding has been established, start the e-work project preparation. It may be the case that a common understanding is not fully established on your first meeting and you may have to repeat your presentation several times.

1.2 How can I start an e-Work program?

If you have one or more partners, you can plan and decide on a common project that will be worked on together on an internet platform. Several details have to be worked out and agreed on beforehand:

- Have you achieved a common understanding about the project?
- What is the aim of the project?
- For whom is the project intended?
- What tasks will be undertaken? Who will work on them?
- What will the timetable and work-time look like?
- What will be the location of the server and platform?
- Who is/are/will be its administrator(s)?
- Which platform program will be used?
- What kind of network, firewalls and security rules will be used?

- What will the budget be like? How much money will be needed for the project?
- Is a training course needed for the users (ICT, technology etc.)?

These questions need to be answered and agreed on with the partners before starting e-working together

1.3 How many partners do I need?

Generally in teamwork projects, two or more partners work together on a joint project and product. They implement the planned tasks, which will eventually be fitted together as the final product of the project.

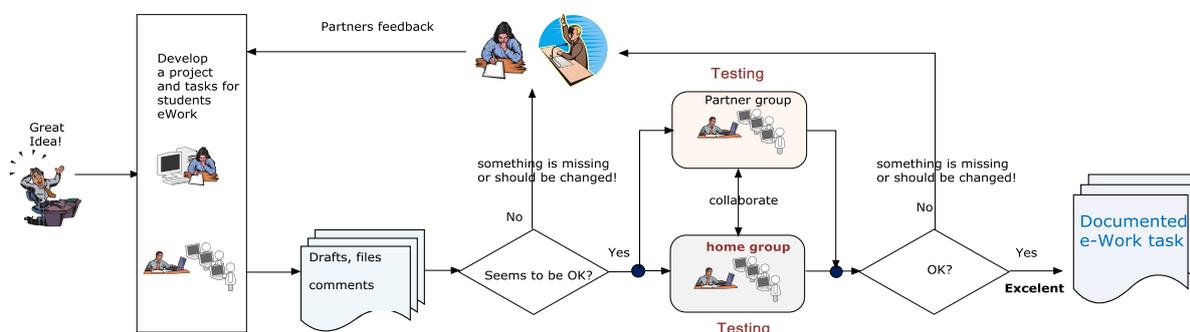
At the school the project time is very limited because of the different study periods and the schools' timetables. So even though the number of teams is not restricted, in practice it cannot be very high. Very seldom will there be an occupational staff available in support of the projects and in most cases the work has to be done by the teachers. The easiest way to work together is a "point to point" project, with only two partners, but in terms of real teamwork there should perhaps be more. You will have to discuss with your partners and determine together the timetable, its duration and its central idea. Hence, you will need to find the right number of partners for yourselves.

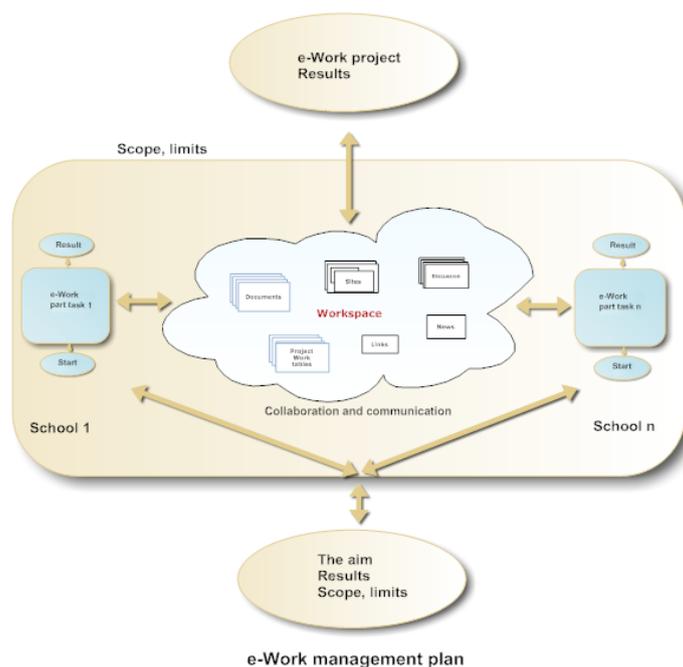
1.4 How can I develop and implement a new e-Work project task?

At the moment the recommended way to study and work within school is to provide students with the opportunity to plan and take responsibility for their studying by themselves. Trainers and teachers provide the appropriate guidance and aims, but the students have to plan and decide for themselves how they are going to achieve results. This kind of studying will increase their motivation, facilitating better learning and helping them to become more independent citizens who can control their work by themselves.

An e-Work task undertaken within school can be planned jointly by the students and teachers. At first, there has to be a discussion about the aims, limits and rules, and then the students can take responsibility for planning and implementing the project: "Learning by doing!" You will need to keep in contact with your the partners by email, videoconferences etc. so that everybody knows what you are doing and what the whole project will be like.

The following chart provides an example of how to plan, develop, test and document a new e-work project that can be developed together. Keep contact with your partners and work together by discussing the problems involved. You will find solutions!





This is a chart depicting how to set up an e-work project. The project is divided into at least two parts, and the partners work on their own parts by themselves in the preparation for the desired result. Because the aim and result will be jointly cooperative, communication and cooperation will be needed so that the parts fit together.

1.5 How to undertake multi-occupational projects

One of the aims is that tasks and projects should be "multi-occupational" because nowadays such aims have also become the general rule in economic life and companies. Product manufacturing is integral to many occupations; construction, metal and machinery, electricity, marketing, painting, servicing, communications, etc. Most of these services are needed everywhere for good results; in other words, producing the best possible product or service for users and customers. Hence, it is essential to study multi-occupational teamwork during the training provided at schools. In real life we have to work with and for other people and in occupations that require real teamwork.

Such skills can certainly be learnt already at school. Thus, if project members come from different occupations where they are studying different subjects, the projects will more realistically correspond to real-life projects. To give some examples:

- Product implementation requires ICT, media consultants, product and economy specialists etc., depending on the type of product.
- Services require many different tools (ICT, technology, marketing, communications, etc.) and such specialists are needed in the projects.

The e-Work projects can be planned to stay within the bounds of particular subject-areas and services, but may not be restricted solely to technology. The markets are global, and an increasing number of communication, languages and teamwork abilities are needed

2 Time

2.1 *How to find common time for the project*

This can be a big problem because schools have different timetables, on-the-job learning periods, general subjects, presentations and tests and study periods during the school year. Starting and closing days are different in different countries, as are the normal holiday periods. Programs are nearly permanent and difficult to change to respond to the particular needs of international projects. In general, we can say that, even so, if you genuinely want to set up a project and you are interested in it, you will find the time to do it, too.

Here are several factors that may help in establishing effective collaboration on a joint e-work project:

- Plan and keep the duration of the projects as brief as possible or plan the projects so that they will not depend on precise working times (a project can be worked on flexibly, but the deadline and checkpoints have to be agreed beforehand)
- Establish your own time-periods when project work is likely to be possible. Draw up a project timeline and checkpoints
- Ask your partners to do the same
- Plan a common project timeline that will be suitable for all partners, teachers and students:
 - What has to be done?
 - When will it be done?
 - How will it be done?
 - Who will do what?
 - When are the checkpoints?
 - When are the online meetings?
- Short projects are easier to implement and fit into school programs. Remember the main aim of international projects: to learn teamwork, communication, cultures and languages. Hence:
 - Projects should require neither special technology nor equipment
 - Several cultural ideas and tasks should be included in the projects. They will motivate the students to communicate even though this may need to be done outside regular school-time

2.2 *What is the best timing for the tasks (duration, school year)?*

Any time is the best time if the project is planned for a specific period of time. Generally speaking, international projects do not depend on the school year of the students. The best time is to start to set them up as early as possible. First-year students will be the most interested in them, and so their first year will be a particularly fruitful time and good for their motivation in starting up international collaboration and continuing it through to the end of their school-time.

The tasks have to be set up so that the students are capable of completing them, easier in their first year and more difficult later on. The preferred tasks can be quite brief and then they will be easier to fit into the normal programs. They should become part of normal schoolwork and lessons, but the way in which they are undertaken will be international.

2.3 *How can teachers find the time to work together?*

“Teachers are too busy to run projects while teaching!” This is a common cry at many schools all over the EU in the present education system. However, teaching and learning technologies are changing more flexibly as they respond

better to the needs of both companies and learners. Teachers are the key people in developing the systems and their teaching in the move towards more "transparent" school systems in the EU. [The European Credit system for Vocational Education and Training \(ECVET\)](#) provides the framework for this generation. ECVET belongs to a series of European initiatives aimed at recognising learning experiences across different countries and different types of institutions.

This means that the educational aims will be shared and topics will be taught and studied in different ways than before. We shall have to forget some of the "old" working methods and change them so that they become more modern and transparent. International projects help in this activity. They should form part of normal lessons and study programs, demanding nothing extra. with the necessary time for their completion forming part of normal work-time.

3 Curriculum, courses

3.1 *How can I integrate e-Work projects with the normal courses?*

You don't need to put "new" subjects into the curriculum and courses since they are already there. E-Work projects are simply new ways of studying these subjects and of forgetting the old ones!

3.2 *How to find common subjects*

The subjects studied may be different in different countries within the same occupations and at the same levels, and the culture of studying them may also be different. An important aim in implementing international cooperation projects is to learn about and then understand these technological and cultural differences and to learn how to work together and to learn from each other. Everywhere there are unique methods of undertaking work tasks and, at least in their own surroundings, they may be the best way of making them work. When students and new workers are going to work abroad, they should know at least some basic details about the working culture of the country that they are going to.

3.3 *How to gain a common understanding of aims and tasks*

If the curriculums and subjects are different from each other, the partners will not understand the aims of the project in the same way. There may be different ways of seeing a curriculum, courses and tasks: "what is necessary, what needs to be done, and how?"

We cannot suddenly change any subjects in curriculums or courses, but we can always discuss them with our partners and list the parts that seem to be in common and the project tasks can be fitted together with them. Remember that nowadays in almost every course and occupation there are common subjects and aims: ICT, communication, teamwork, languages and global international understanding of different cultures, all of which can be included in the cooperative framework of e-work projects. "Life is more than mere technology" is also a good slogan for projects, and should be kept in mind.

4 How to motivate both students and teachers

4.1 "Why do we have to do this?" "Why can't we study like we used to?"

Not all students will understand the aims of a project and so there will be motivational problems. The best way to motivate students is to teach and train them to understand that the e-work projects are simply a new way to study their occupational and core subjects. They need to understand that project tasks are part of their study programs, nothing more! They need to do them if they want to pass the course. The way to study and learn their content is by means of an international e-Work project, and they can plan part of it by themselves. Communication, languages and teamwork all form part of their professional skills, and they now have the chance to learn them easily and naturally.

A preparation course about the aims of the course, using platforms and ICT may be necessary. When students know what to do, why they need to do it, and they can decide by themselves how to do it, most of them will then be motivated to study and work in this way. The feeling that "my linguistic ability is not good enough" can be forgotten. Most students will have the basic ability in the languages, but they may not have used languages since they studied them at secondary school. When students work together in a team, within a couple of minutes they will be communicating together and understanding each other very well. One important aim of the e-Work projects is also to activate the students' linguistic skills.

They will gain new friends and spend their free time together on the Internet, too. However, "face-to-face" contacts will also be necessary too (see 4.2, below).

4.2 How can students' mobility be connected with e-work projects?

EU Lifelong Learning Program 2007-2013 and *the Copenhagen process provide guidelines on how to develop [common European frameworks and tools](#)*

- to enhance transparency
- recognition and quality of competences and qualifications
- **making the mobility of learners and workers easier**

supporting the Lisbon Strategy:

- harmonisation of European curricula in VET
- Internationalisation at home
- enhancing the quality of teaching and learning in national and international contexts
- an opportunity to exchange projects, experiences, and innovations between institutions

Even though the aim is to increase e-Working and communication/discussions on the Internet, it is also a good way of increasing students' motivation through mobility programs and providing opportunities for them to make "face-to-face" contact.

If students have had the chance to meet each other before the project, then it will be easier to start the project itself. They will be more interested in the tasks and in the partners working with them even in the evening and during their holidays.

Of course, not all students will be able to travel, but hopefully some of them can, so that they can share information with others. A very useful opportunity may be provided by a LDV partnership project where a group of students and teachers can visit a partner school for a week. Another possibility is the LDV placement program where students can go to the partner's school and/or a company for three weeks or more for on-the-job learning.

5 Communication

5.1 *How can we increase "online and offline discussions" between students and also between teachers too?*

In the PLIME project, real discussion on the internet platform has been difficult between students but also between teachers. Internet chatting about free-time activities is normal and nearly every student is able to do it, but when it is connected with working or learning activities it becomes more difficult. Why?

The PLIME project has been a research project aimed at finding a new way of working through the Internet in connection with normal lessons. International communication is a necessary part of the cooperation, but in most cases it is a new way of working and so it may seem somewhat difficult. Students and teachers have their own work programs at the schools. They are very busy all the time! Curriculum and timetable have been programmed beforehand and "jumping out" from them to do something different is difficult. If learning, teaching and studying could be more "project based, problem based and teamwork based", as it is in companies and real life, communication could become a natural way of studying and working because it would be needed for the results.

A generation is moving globally towards e-working, e-learning and teamwork. Training and learning will not be connected with school buildings and school time, but they will happen wherever and whenever. Vocational education and training schools should become aware of this generation and change their "working ways" to better respond to it. Communication through the Internet is a natural part of today's working life.

If you are the project coordinator, keep the discussion ongoing all the time. Ask questions, give comments and organize online meetings, video conferences, etc. Training more and more and repeating things are the best way to increase online discussion. Within a little time it will become a natural way of communicating.

5.2 *How to increase discussions between different occupational teams*

In the PLIME project there were only a few discussions between different occupational teams and different educational fields. The aim was that different professions (AUTO, AVC, ELE and MECA) could learn each other. The project time was, however, too short for students and teachers to attempt real cooperation across "professional borders", but this may become possible if more time is allowed. Projects in real working life are normally connected with several professions: marketing, business, various technologies, services etc., so they should be designed to suit as many professions as possible that may be connected with them.

In the schools projects cannot be very large but even so, they should be made as "multi-occupational" as possible. For example; "car electronics", "building automation", "a servicing company abroad", "energy saving", "climate changing" etc. where several professionals are needed to implement them or who could be working together on a common topic.

5.3 *Can I use blogs, [Facebook](#), [Windows-Live](#), [Google wave](#) etc. in support of cooperation?*

The Internet is changing very rapidly. It also provides new opportunities for collaboration on e-work projects. The Internet offers many free platforms and materials for studying, learning and working there (see: [Appendix 6 e-Work platforms](#)). These will become increasingly common in everyday life and in the schools we have to learn how to use them as well.

Nowadays students are often more prepared to use the Internet than their teachers, especially in their free-time activities. At the schools teachers and educators will have to re-organize so that students have the chance to use the Internet as "a tool" for completing their studying and working tasks. Students will have to be taught how to use the Internet for doing their projects, looking for information, but not for free-time activities while at school. There are huge databanks, plenty of information and working materials, some of which may sometimes be inaccurate, too. Students have to learn how to analyze "Internet data" and to learn to use using only "accurate" information when they need it!

Students should be given the opportunity to try out different new blogs and platforms for collaborating with their foreign partners. The groups or teams may be started in "Facebook" or other social platforms, but remember that in schooldtime they can be used only for studying and learning, not for free-time activities. Frequently, students will also be able to administer platforms by themselves. Help them to undertake common e-work projects and if a particular platform does not work or is not good enough, try some other.

6 Core subjects

6.1 How to fit e-work tasks and core subjects together

A large aim or dream is to connect occupational studying and core subjects (languages, mathematics, physics, social subjects etc.) together so that they will support each other as they might in real life. Unfortunately, this is often impossible at VET schools because studying is divided into courses that take place at different times, even in different study-years. It is almost impossible to undertake common projects using different professional and/or core subject teachers at the same time.

Language studying sounds as if it would be a very natural part of international cooperation and e-work projects if course timetables fit together. It would be best if students could study the required project material and write documents in the language lessons. In many projects other subjects are also needed, e.g. mathematics, physics, social subjects etc. If the courses were scheduled at the same time as the e-work project "[CLIL \(Content and Language Integrated learning\)](#) may be implemented.

"[CLIL \(Content and Language Integrated learning\)](#) is used to describe educational methods where subjects are taught through a foreign language. CLIL has dual-focused aims, namely the learning of content, and the simultaneous learning of a foreign language. In Finland and the rest of Europe, CLIL-teaching is implemented in varying educational contexts ranging from pre-school to higher education"

Read more from: http://www.opeko.fi/clilnetwork/englanti/what_is_clil.htm

6.2 Linguistic problems

During the PLIME project many students and teachers also felt that their English language was not good enough to produce the required files and to communicate with foreign partners. This was a problem especially at the beginning of the project, but after a time it was no longer so noticeable.

Sometimes it is difficult to place material on a common platform if it is not written in "perfect language" because everybody would be able to read it, even the language teachers! The aim, of course, has to be that the language would be accurate. Language teachers could perhaps help at the same time. But because this may very well be impossible (see 6.1), we have to accept mistakes, too. The most important aspects are communication and cooperation, and students and teachers should be brave enough to use the languages they have. Most of the "texts and speaking" are in comprehensible language, and we need to encourage students and teachers to use it. Of course, the aim is to learn "accurate" language, but because the Internet is "a big mess" of languages, incorrect words and grammar, everyone needs to recognize that language cannot always be learnt without teachers!

7 Technology:

7.1 *How to build up and maintain an e-work platform*

All common work platforms need a server where they can be installed. Installing the server, operating system, e-work platform and its services are very professional work and should be done by expert computer and network assistants. Programs and technology need very complicated user administration, security programs, firewalls and feedbacks. Normally, teachers have no proper ability to install and maintain them.

You will need to discuss with the school network administration about whether they will undertake such work. Another possibility is to buy an "all services" package from a commercial company. They will do everything that you require but the costs are normally too high for schools.

There are also many "open source" and free platforms (see: [Appendix 6 e-Work platforms](#)) and they may be good enough for e-Work projects, although they will also need professional administration.

One thing has to be remembered; no platform and system will ever work without administration and maintenance. Somebody has to install equipment and programs, and help users to use them. This is also important to remember if a common project webpage is in use; it will be much easier for the project staff if professional assistants maintain the webpage.

7.2 *How to administer a platform*

Basic installation of a platform has to be done by professional computer/network assistants. They will also save backups of the files as often as needed. Other occupational, communication and office programs will be located in local desktops or laptops.

A main project platform administrator will also be needed. He/she will be a person who has "full rights" to the platform. His/her job is to construct the layout of the pages, add/delete users, and give their rights. User-training and servicing are also tasks performed by an administrator.

The daily users will mainly have "Design - Can view, add, update, delete, approve, and customize" or "Contribute - Can view, add, update, and delete" rights to the site.

The teams that are using the sites should organise their work so that they maintain their sites by themselves. One person should be a "team leader" and he/she will organise working on the sites. The platform administrator will provide him/her help when needed.

7.3 *What e-Work platform is the best?*

There are hundreds of open-source and commercial e-learning/e-work platform possibilities on the Internet. All of them have some good and some less good features. There is no platform that will be good for everybody, but a simple answer to the question is: The best platform is one that can be used by every partner and respond to the project needs! If the e-Work platform is a new one, a training course designed for using it will be necessary.

Remember that ICT is changing all the time. New "better" platforms will frequently be published. You should try them out before finally choosing the one for general use.

See: Appendix 6. [E-Work platforms](#). LdV-project: "eTutors" <http://www.etutors-portal.net/>

7.4 What operating systems can be used?

"How to use different operating systems (Windows, MAC/OS, Linux) and how they fit together with the platforms." Sometimes different operating systems in desktop computers work differently depending on the platform which is in use.

Sometimes this is a problem in the networks, but if you find out what cannot be done, you can also avoid them. The main advice is that if you have a Microsoft server system and Microsoft programs there, it is also better to use Microsoft OS and MS Explorer in your desktop/laptop computers. Then the programs will fit together and you can do "nearly all" of the required things very well. When using different OS in desktops/laptops, not everything can be done in connection with a MS server.

If "Linux or MAC/OS" and/or open source software is in use at the server, you can normally use nearly all explorers and operating systems. Again: try them out and ask for help from the computer and network assistants.

7.5 What has to be known when working on the platform?

ICT ability is the key skill for working on the platform. How to manipulate the correct size of pictures, photos and files has to be known. In addition, you have to remember "[copyrights](#)" when adding texts, pictures and/or photos to the site.

Because the platform and sites are common, the international "[netiquette](#)" is important to know, too. Read more from: <http://en.wikipedia.org/wiki/Netiquette>

7.6 How can a video server be obtained and used? How to get sufficient file space for video files

From Wikipedia, the free encyclopedia http://en.wikipedia.org/wiki/Video_server

"A video server is a compute-based device (also called a 'host') dedicated to delivering video.

Unlike PCs or Macs, both being multi-application devices, a video server is designed for one purpose: provisioning video, often for broadcasters. A professional grade video server records, stores, and plays back multiple streams of video without any degradation in the video signal. Broadcast quality video servers often store hundreds of hours of compressed audio and video (in different codecs), play out multiple and synchronised simultaneous streams of video, and offer quality interfaces such as SDI for digital video and XLR for balanced analog audio or AES/EBU digital audio and also Time Code. A genlock input is usually provided to provide a means of synchronizing with the house reference clock, thereby avoiding the need for timebase correction and frame synchronization.

Video servers usually offer some type of control interface allowing them to be driven by more sophisticated scheduling or play-listing applications. Popular protocols include VDCP and 9-Pin Protocol.

They can optionally allow recording using the same codec that is used in various editing software packages to prevent any wasted time in transcoding" e.g. <http://www.youtube.com>"

Normally the quality of the common public video server files is not good enough and you have to get space more from somewhere else. The best way is to open a site on a file server where the space capacity is big enough. Nowadays, their price is not high, but a problem may be caused by the network speed. It takes too much time to download/upload videos. In these cases the best thing is to use blue-rays, dvd's and/or memory sticks

7.7 How to study ICT when using an e-Work platform

ICT is today's skill in all occupations and social life. ICT is a tool for doing any task, but frequently the users' skills are insufficient to use it (MS-office, handling of photos, internet).

The basic ICT skills and programs are learnt at school, but because the technology and programs are changing very rapidly, users have to study and train with them all the time.

When e-Working, ICT is one of the most important tools for working on it. There are many things and tasks that cannot yet be done, but you can study and learn them while working: "Lifelong Learning". Partners may be experts in many tasks and they may also be able to help you.

An ICT training course may be necessary before the start of the project. This can be compared with the situation where e.g. you may have bought a "new motor-saw" and you have not used it before. You should take a training course before you can use it" for reasons of safety, correct working methods and services! ICT is also a new tool, and you have to know how to use it.

7.8 How to solve communication problems, firewalls, internet security

"The communication programs and the platform cannot be used with the courses and e-work tasks" "I cannot connect with the e-Work server!" "My computer doesn't connect with the internet!"

It is very well known that the Internet is not the safest place to work. Millions of viruses and spyware can destroy your work, delete files or use them for some other purpose. Even though normal users can do some "impermissible" things there, they won't work as they should. Firewalls and blocking programs against viruses, spyware and spam are essential. Network administrators also impose restrictions on the use of many necessary programs and resources. Sometimes you cannot connect with the e-work server or use the necessary programs.

When you are using an e-work platform, test it from all the workstations that are likely to be used for the e-Work tasks. If there are problems, make a note of them;

- Name of the workstation
- Network address
- The room where it is
- Server name and address that you'd wish to use
- Programs that you wish to use
- Problems that you may have

Go to the network administrator and tell him/her your requirements and problems. In most cases he/she will be able to solve the problems.

"None of the students had any opportunity to use computers and networks when needed. There were too few computers at school or they didn't work as they should have."

A computer is a tool for working in most occupations. There should be at least a few computers connected to the Internet in classrooms and workshops. They will not be there for playing games but for studying and for working on set tasks. A training course will be needed in how to use them and when.

7.9 How to increase network speed

"Download/upload speed has been too slow."

A very easy answer to this problem is: "Pay more and you'll have a faster network connection". Network companies have priced their networks depending on the speed that users like to use. In most cases school budgets have been far too small for the speed that computer users would like. So the speed is a compromise between costs and needs.

Sometimes a user's desktop/laptop may also have become "corrupted" and there may be too many programs working simultaneously. Computer/network administrators can help in "cleaning" up the desktop/laptop.