Evaluation of the MustLearnIT project

Using ICT for Special Subject Distance Learning in Multigrade Schools

University of Jyväskylä,
Kokkola University Consortium Chydenius

Ilkka Luoto

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Authors:	Ilkka Luoto
Contributors:	-
Contact person:	Ilkka Luoto (ilkka.luoto@chydenius.fi)

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Foreword

The evaluation report at hand, aims to assess the MustLearnIT project model: How to use ICT for special subject distance learning between central and multigrade schools in five different participant countries. Most of the issues presented in this paper are also related to general ideas about teaching and education – especially within contexts of the special subject (foreign language) and multigrade teaching. The report concentrates on assessing those issues presented in the full proposal paper for the Socrates programme.

It can be said that a project never totally fails or succeeds. Usually it generates a lot of useful information by its drawbacks and successes which can be further refined into a collection of organized knowledge. That’s what I have tried to do in this report.

I am responsible of all the data analysis, interpretations and ideas presented in this paper. A researcher is never totally objective in the deep sense of the word. A text is only one kind of truth of a limited situation, even when the text is woven around some numerical expressions. Of course, my unconditional aim has been to achieve as truthful and accurate picture of the MustLearnIT project as possible in the given circumstances. As a geographer I have tried to draw a detailed map where many different routes and paths are visible instead of one busy highway road. These paths form the fabric of this evaluation text, and when an observer leans back, some bigger patterns might become visible.

"A man's got to know his limitations." as H. C. puts it. The major limitation of this evaluation is that I didn’t have the possibility to come to watch and feel how the implementation of the MustLearnIT project is on-going in the actual everyday classroom environment. I had just a few tiny glimpses of that world. Those glimpses during the project meetings in Greece, Poland and Finland together with the evaluation data have been my windows and coordinates when writing this textual map.

Heartfelt thanks go to the Greek project coordinator, Socrates/Minerva Action Programme and to all the project partners, teachers and pupils who participated in the MustLearnIT project.

Ilkka Luoto, evaluator

In Kokkola, 12th of September 2007

1. MustLearnIT project

The MustLearnIT project targets primary schools in five European countries (Greece, Finland, United Kingdom, Poland and Cyprus) operating under special conditions such as multigrade teaching and remote schools, where a few teachers, or even a single teacher, are responsible for teaching a small number of pupils of different ages and grades a variety of lessons, and where often there are no “subject specific expert” teachers for a number of lessons, as opposed to larger “standard” primary schools where several teachers of various specialisations cater for classes, each of which consists of pupils of the same age and abilities.

The project’s major objective has been the design and development of an integrated distance learning model for learning, to aid multigrade primary schools by sharing resources such as teaching staff (local and remote) and by taking the utmost advantage of existing technical infrastructure. The model is supported by ICT in the classroom, with specially designed educational activities using appropriate educational software and is to be applied in synchronous and asynchronous modes. (FP 2005: 4).

The MustLearnIT distance learning model includes three main activities: 1) Pupils in remote multigrade primary schools take part in special subject lessons from the central school by video conferencing (synchronous mode, later in this report it will be called a distance learning lesson). Meanwhile during these lessons, the local primary school teacher is present in the classroom. 2) Pupils can work on their own using appropriate educational material and software on the schools’ computers (asynchronous mode, later in this report it will be called online material). 3) National MustLearnIT project organisations in Finland, UK, Greece, Poland and Cyprus focus on building a model for distance learning and provide support to the participating school teachers. This has included offering teachers training with technical support and guidance for didactics in the classrooms. (DD 2007: 30-31).

The biggest challenges of the MustLearnIT project have been: 1) finding suitable schools and committed teachers, 2) developing a suitable distance learning model where technology and pedagogy unite seamlessly, 3) overcoming technical difficulties, 4) working effectively within the constraints of the project schedule and managing cooperation with only a few face to face meetings 5) dealing with cultural differences of participant institutions in five different countries and 6) finding appropriate evaluation tools for five different scales of implementation and for five different approaches to distance learning models.

2. Evaluation methodology

The final evaluation was resourced for, and undertaken within a three month period, whereas ongoing evaluation took place throughout the whole duration of the project. A commonly

accepted purpose states that to evaluate is to examine the process of the project, its aims, functions and implementation. Fundamentally evaluation is evidence based research where collected data should demonstrate how the project has achieved the planned goals. It can be done in three different ways: 1) In illuminative evaluation, the description and interpretation are more on the stage than measurement and prediction. 2) Evaluation can also be based on the carefully selected data which measure the fulfilment of the major goals of the project, or 3) evaluation can be recognised more as normal research work. The evaluation of the MustLearnIT project is primarily research based where success and drawbacks should be visible from the research data and its interpretations. Instead of assessing the pure impact of the project, I have tried to describe evaluation data in such a way that it is possible to find out how teachers and pupils in the project schools view the intervention of the MustLearnIT project.

When planning a project there are accurate stages and functions which are scheduled into the project plan document. On the other hand, as ideas are put into practise and the project begins to gain momentum, there is also an invisible level of ideas which run parallel with the official project schedule. This invisible level could be called a transparent level of the tacit project knowledge shared by the key persons. I have also tried to bring to light some of these ideas.

A more specific purpose of this evaluation is, through the analysis of the evaluation data, to show how the idea of the project has been adopted in different countries, and how distance learning schemes and technologies are used from country to country, and to consider the kind of interpretation which can be made according to the evaluation data. This report tries to answer the following questions:

- What is the value of the distance learning model adapted by the MustLearnIT project in general and in the participating countries?
- Has distance learning been didactically meaningful related to multigrade teaching and special subject teaching?
- Has the model created good learning in the classrooms and what is the role of technology in the learning processes?
- What has happened in the schools’ since the project has been implemented?
- How has the MustLearnIT project progressed in the sense of management of the project itself and the projects different functions?

Figure 1. Celia, Kostas, Dimitris and Anastasia pondering some aspects of the project during the meeting at Patras, Greece.

3. Description of the MustLearnIT project partners

The five participant countries and key persons in the MustLearnIT project:

Finland**,** University of Jyväskylä, Kokkola University Consortium Chydenius
Continuing Education Department, Juha Paasimäki, project implementation
Society Research Department, Ilkka Luoto, evaluation

United Kingdom (later UK), University of Warwick
Institute of education, Alan Pritchard, project implementation
Institute of education, Anne Barns, language teaching specialist
Institute of education, Marilyn Hunt, language teaching specialist

Greece, The Research Academic Computer Technology Institute (CTI)
CTI, Demetra Ergarchou, project implementation, project coordinator
CTI, Maria Fountana, project implementation
CTI, Celia Roniotes, education specialist

The Hellenic Open University
Thanasis Hadzilacos, software engineering and distance education specialist
Nikos Sifakis, distance education specialist

Poland, National In-Service Teacher Training Centre
Marlena Falkowska, project implementation
Katarzyna Zakroczymska, education specialist
Witold Kolodziejczyk, ICT specialist

Cyprus, Cyprus Pedagogical Institute
Anastasia Economou, project implementation
Sophie Ioannou-Geogiou, education specialist

3.1. Implementation in Finland

Finland's surface area is 360 000 square kilometres, of which 10 % is lake or sea district, with a population of only 5.2 million. It is estimated that 30 % of the schools are in fact isolated multigrade schools. Even so, the national school network is still quite dense. There is an administrative pressure to shut down small rural schools and a hot discussion about developing the national school network is going on. It doesn't make it easier that one of secrets of the good Pisa result is assumed by some commentators to derive from averagely small school sizes. In the Central Ostrobothnia area where the MustLearnIT project was implemented, the participating schools are relatively near each other; only about 20 minutes drive away.

English teaching is part of the national curriculum and pupils would have English lessons even without the aid of the project. Usually it is the class teacher who teaches a special subject at the primary level. A lack of specialised teachers is observed mainly in the subjects of foreign languages. The MustLearnIT project has brought added value by bringing subject specialists in to the multigrade classrooms with the aid of technology.

In Finland the level of educational technology is high and the schools are well equipped. All the participant schools are connected to the regional fibre optic network with 100 mb speed. In schools there are several computers available for pupils and teachers. In the implementation the role of technology was principal. From the beginning of the project, the Finnish participants were counting on high level videoconferencing technology and rejected the Centra platform offered by project coordinators. During the project many systems were tested, for example Centra, Skype and Xenex systems. During the end of the third round of implementation web based Adobe's Connection Pro was used and teachers found it more reliable than videoconferencing equipment.

Finnish national online material was used in the project. The Opit e-learning platform has been developed by the Finnish school book publishing company WSOY and it was given for use to the MustLearnIT project with separate permission. All the schools also had access to PEDA.NET which is an environment for school education and networking.

In the Finnish implementation, there was one central school, Toholampi upper secondary school and two multigrade schools: Veikko Vionoja School and Rahkonen School.

There were also some organisational problems; it was difficult to involve the central school teacher in the project because of constant changes in teaching staff. During the third period of the implementation, the Finnish participants encountered many technical problems.

3.2. Implementation in United Kingdom

UK surface area is 242 342 square kilometres with a population of about 60 million inhabitants. The country is densely populated and most of the schools have a multicultural nature. In the UK the teaching of languages is difficult because of the lack of teachers who are able to teach the subject. This problem has been noticed at a national level, and currently there are post graduate teacher training courses for teachers in the primary sector, but the number of specialist language teachers entering the profession over the next five years will not meet the demand in schools. (DD 2007: 16-17).

The UK implementation was based on videoconferencing where the special subject teacher was focused on teaching the distance learning lesson, without having the responsibility of teaching central class room pupils at the same time. The model of teaching and learning being implemented involves weekly lessons conducted via a high-quality video line taught by a native language specialist teacher from the central school in an appropriate secondary school. Online material wasn't used at all in the UK implementation, although there was some, it was not directly project related. The model of implementation is based on one central school, Tile Hill Wood Language College and two primary schools: Mount Nod primary school and Park Hill primary school. These rather big schools were only two miles away from each other; unlike Greece and Poland, the situation in the UK was more similar to that in Finland, where it could be assumed that language lessons would have taken place without the technical support of the MustLearnIt project. The special subjects taught in the MustLearnIT project were Spanish and French.

The UK had some difficulties in the middle of the project with technology and teacher resources involved in the project. Also some difficulties with MustLearnIT project personnel resources.

3.3. Implementation in Greece

Greece has a surface area of 132 000 square kilometres with 11.2 million inhabitants. Mountains and islands are the typical geography of Greece. In a total of 6 259 school units of primary education in Greece, 2 512 (40 %) are multigrade elementary schools. Half of multigrade elementary schools have a least one computer in every classroom connected to the internet. English language is obligatory in grades 3-6 but these schools don't have special subject teachers. This leads to the situation that in most cases pupils are not taught English at all. Only 14 % of multigrade schools can offer English teaching to their pupils. In the last few

years most of the Greek school units have been equipped with computer and data networks. More than 60% of multigrade primary schools are connected to the internet.

For the application of the MustLearnIT model, the Centra platform for distance learning and the Moodle platform for online material were selected. The in-class application will enable the pupils of the multigrade schools to come into contact with the pupils and the English language teacher of the central school through a computer environment that support image and sound. (See more DD 2007: 59-61).

The MustLearnIT project management was performed by the Greek project resources. In Greece implementation participant schools were selected by questionnaire from three different geographical areas from the islands and highlands of Greece. The implementation was the most extensive and ambitious in the MustLearnIT project including altogether 4 central and 9 multigrade primary school teachers from 10 participant schools. The Greek model was also offering pupils English language teaching which they may not have had access to at all without the aid of the project. The project had to apply for special permission from the ministry of education before getting started.

3.4. Implementation in Poland

Poland has a surface area of 312 685 square kilometres and the population is 38.7 million inhabitants. Poland is an agricultural country and small remote schools are located in rural areas and in small villages all over the country. Maintenance of multigrade schools is seen to be expensive by the government, and often the only way to survive is its transformation into a non-public school. In Poland there are 14 765 primary schools with 2 723 661 students. The status of multigrade schools is not defined clearly because these schools have a different status depending on whether they are the local government led or supported by various associations. It is estimated that there are about 300 multigrade schools in total in Poland.

The compulsory foreign language learning starts from grade four but very often there is no specialized teacher for this subject. There are many manuals for English teaching and teachers are making changes to their teaching depending on personal choices and teaching methods.

In the Polish model, pupils of the multigrade schools will contact the specialized English teacher via a distance learning platform and they will participate in lessons conducted in the central school jointly, with pupils form the central school. Aurum was used for the online learning material and Centra as the distance learning platform, as it was recommended by the Greek coordinator. There was one central school and three smaller multigrade schools. The multigrade schools were located far away from the central school (300-400 km) and they were in remote rural areas. In each of the multigrade schools, it was possible for four pupils to take part in the distance learning project. The special subject taught in the project was English language. (DD 2007: 76-90).

There were some technical restraints in the Polish implementation, especially with internet connections.

3.5. Implementation in Cyprus

Cyprus is the third biggest island in the Mediterranean Sea. Its surface area is 9 250 square kilometres and there are 720 000 inhabitants on the island. Despite the small physical size of the country, there are a number of small, multigrade schools on the island. These schools are very important to their local communities but sometimes can not offer the same education which is offered in larger urban schools.

In the Cyprian school system pupils are taught English for three years while they are in primary school. The subject is taught either by the class teacher or more rarely by a specialised language teacher. The Cyprian educational system places the most inexperienced teachers, who do not have many so called placement points which are collected with work experience, away from their homes or in small multigrade schools. (DD 2007: 25-27).

The implementation aimed to create a teaching and learning partnership between the teachers and pupils of large and small multigrade schools in order to improve the pupils learning experience and the overall quality of the teaching of English. At predetermined intervals, key lessons were delivered synchronously by the central school teacher through a distance learning platform Centra. In between distance learning lessons the teacher would further consolidate the language taught through online material which was provided by the project coordinators and made available on the internet in the Moodle environment. From the beginning of the project, teaching methods and didactics was emphasized in the Cyprian model, and teachers were trained with the attitude “teachers as researchers” in order to encourage them to develop their own working environment at the same time.

There have been some serious technical difficulties because of the low band width connections. In the middle of the implementation the original project school dropped away and the selection process was then started again.

4. Description of the evaluation data

I have used both quantitative and qualitative methods to perform evaluation. However, the spirit of evaluation is certainly qualitative which means that meanings are constructed along with the project implementation. The data derived from questionnaires is the back bone of the evaluation data. The original idea was to make two data collections, one in autumn 2006 and another in spring 2007. However, the realities of the project soon became obvious and only one larger data gathering session was arranged in 2007 spring time.

4.1. Questionnaires

I have collected most of the evaluation data by questionnaires which were first sent by email to all the project partners for commentary. After commentary some adjustments were made depending on the local mode of action. The idea was that evaluation could be flexible enough, and be able to describe different solutions and cultural contexts. At this point the original idea to use the Optima learning platform for data gathering was reconsidered and hard paper copies of questionnaires were used because we also wanted to gather pupils' drawings, and at that point I also found out that translations of questionnaires would have made electronic data gathering too complicated. In Greece, the UK and Poland teacher questionnaires were slightly different with some additional and specified questions. Comparisons between countries are still possible. In Cyprus and Finland identical questionnaires were used.

In the beginning of the MustLearnIT project the idea was that pupils in the multigrade schools are not evaluated directly but through the teaching staff. I assumed that teachers are the best experts when it comes to pupil's skills and attitudes. However, during the project meeting in Poland, most of the project participants were willing to do more extensive data gathering and pupils where also included in the evaluation through the use of a short additional questionnaire. In Greece and Poland pupils also drew a picture reflecting the emotions and functions of the MustLearnIT project. The possibility to draw a picture was included as an empty page attached to original evaluation form. (See more page 48).

Greece, UK and Finland returned the original completed teachers' and pupils' questionnaires by "snail mail" with necessary translations, just as it was instructed by the evaluator. Poland sent the questionnaires as Word files and Cyprus as ready filled Excel tables.

Detailed instructions for evaluation data gathering were sent to participants (see appendix 1), and also detailed instructions for filling the form were included. There were a few open ended questions and if any translation work was needed related to them, it was carried out by the local educational institutions.

4.2. Focus group interviews

Partners were also asked to arrange the focus group interview for teachers and experts who were taking part in the project. The focus group conversation is an effective tool when formulating mutual understanding and information which in addition can help all of us to shape our thoughts and attitudes about the project. When using the focus group method, it is not important to know how many people in the group are having a certain opinion, but more important is to find the perspectives and ideas shaped together during the interview. The idea is to produce good conversation on given topics. In the focus group method participants are allowed to say anything they would like, and the social semi-public nature makes the data collection unpredictable and vivid.

There was a ready made agenda of themes made by the evaluator. The leader of the focus group conversation was instructed to make a short memo of conversation and sent it to the evaluator (See more appendix 2). The focus group interview memo was carried out by Greece, UK and Finland. Poland and Cyprus could not accomplish the focus group interview. The focus group memos provided valuable information from the perspective of evaluation because of the qualitative nature of the information. Ready made memos were a concentrated and processed form of text and well made.

5. The sample

The core of the evaluation data is a combination of teacher and pupils questionnaires, the focus group interview memos and additional material. I have used the following documents as data to compose the ideas presented in this evaluation report:

1) Questionnaires for teachers and pupils, 2) focus group memos 2) full proposal application form, 3) progress report, 4) project portal and emails, 5) informal comments and ideas, texts and photos and 6) observations during the visits in schools and project meetings. All these sources together contain sufficient data and information sources about the distance learning model and general project progress.

The project management is not included directly in the evaluation, however the management and functionality of the MustLearnIT project has been included indirectly by observing general communication, time tables and project meetings. The success level of the MustLearnIT project as a process can be best seen through all aspects of evaluation presented in this report.

A few remarks regarding the coding and the text follow. I have written all the numbers under ten appearing in the body of the text in alphabetical form, if the expressed number is bigger than nine it is given a numerical expression, also if the number is inside brackets it is given numerical expression. Focus group text loans are coded as follows: FCFin = Finland, FCGre = Greece and FCUni = UK. Text loans from teacher questionnaires are coded with the same logic but they start with the letter T to indicate a teacher’s viewpoint, so TCyp would be teacher from Cyprus.

5.1. Teachers

Teachers in the multigrade and central schools are in the key position when assessing the practical implications of the project. The teachers who implemented the MustLearnIT project aims in their daily work are the best people to tell us how schools have integrated distance learning schemes into everyday school work, and what experiences they had of that work.

In the teachers' sample, there are 30 respondents where one respondent represents 3.3 percent of the whole sample. When reading data concerning teachers, some caution should be applied, and it might be better to look at the number of teachers rather than percentages. A full sample will be used and all participant teachers are included in the evaluation. Most of the participant teachers were females (83%).

As part of the whole project, there are 10 central schools teachers and 15 multigrade school teachers: In Finland four (2 central) teachers, UK four (1 central), Greece 13 (4 central), Poland five (1 central) and Cyprus four (2 central) teachers. The number of teachers all together included in the evaluation data is 30.

Table 1. School's position and number of teachers by country according to the sample

			School's position		
			multigrade school teachers	central school teachers	Total
	Finland	Count	2	2	4
		% within country	50,0%	50,0%	100,0%
	UK	Count	3	1	4
		% within country	75,0%	25,0%	100,0%
	Greece	Count	9	4	13
		% within country	69,2%	30,8%	100,0%
	Poland	Count	4	1	5
		% within country	80,0%	20,0%	100,0%
	Cyprus	Count	2	2	4
		% within country	50,0%	50,0%	100,0%
Total		Count	20	10	30
		% within country	66,7%	33,3%	100,0%

The work experience of teachers in the project varied from one year up to 23 years. The most experienced teachers participating in the MustLearnIT project were in Cypriot and Finnish schools with an average value of 13 years of work experience. The average work experience in Poland was 11 years, in Greece eight years and in the UK six years. In the project as a whole, the average years of teachers work experience was 10 years. Against these numbers teachers had enough professional background to accomplish the demands of the MustLearnIT project.

Most of the teachers involved in the project were active computer users, 73% (22) were using computers several times a week or daily at work. Nearly 80% (24) felt that they are good or

excellent users of computers. Teachers' basic ICT skills were sufficient to meet the challenges of the project.

According to the Finnish (FCFin) focus group conversation, two of the teachers had previous experience of distance learning courses. All Finnish teachers agreed that computers are familiar for all of them and they are used in many ways, for example using internet as a general information source and administrative tool. They also emphasized that in rural areas, it is even more important to know how to use data networks in an effective way.

In the UK focus group it was found that they are experienced users of videoconferencing techniques:

> *One school started just before the project with a series 6 lessons of video conferencing over a 6 week period. For another school this is the third year of using videoconferenced lessons in French every week (FCUni).*

The same issue came out also in the UK's teachers' questionnaires:

> *We participate in regular video conference with a local secondary school for MFL (Modern Foreign Language) lessons, we have also participated in various science and history based video conferences (TUni001).*

Teachers taking part in the Greek focus group didn't have previous experience of distance learning:

> *No teacher reported any experience with either distance or computer aided learning prior to their involvement with the project (FCGre).*

In any case, it did not slow down Greek teachers:

> *They all reported that this experience was something entirely new and fresh and they didn't believe at the beginning that it was going to work so well (FCGre).*

Teacher training was an essential part of the project and tightly connected to the successful implementation of the project. According to the teachers' questionnaire, training was sufficient but didn't quite reach all the teachers. Training is also a question of motivation. If teachers are well motivated to learn new methods training shouldn't be a problem.

In Finland three teachers out of four had training to use equipment and distance learning techniques as part of the MustLearnIT project. In the UK all four teachers had training. In Greece five teachers out of 13 had training to use equipment face to face and 11 out of 13 received remote training. One teacher didn't have training at all. Four teachers out of 13 stated they had face to face training about distance learning techniques and nine out of 13 had it as remote training. Three didn't have training at all. In Poland one teacher out of five stated that

they didn't have training to use equipment, in total 50 hours of training were given for teachers in Poland. In Cyprus 2 two teachers out of four didn't have any training. Through out the whole project five teachers out of 30 stated that they didn't get any training to use equipment and six stated that they didn't get any training about distance learning techniques.

5.2. Pupils

The sizes of pupil samples by countries were not similar, and that limits the usability of quantitative methods, especially comparison methods. The total accurate amount of the pupils participating in the project might differ from the numbers presented in the light of the evaluation sample. Pupils' absence or some other reasons why questionnaires have not been completed caused the minor differences, for example in Greece the total amount of participating pupils is 83, and in the sample there are 78 pupils. According to the sample, the amount of pupils in Finland (72), the UK (156), and Greece (78) are sufficient for statistical analysis but in the case of Cyprus (30) and especially with Poland (12) interpretations should be made cautiously. Through out the project all the pupils (348) included evaluation data, and this gives good possibilities for statistical data analysis. The age of the pupils was between 6-13 years and 52% of them were girls. In the UK all the pupils were included in the multigrade school category because the central school teacher didn't have pupils when giving distance lessons.

Table 2. Number of pupils in multigrade and central schools by country according to the sample

			School's position		
			multigrade school pupils	central school pupils	Total
Country	Finland	Count	33	39	72
		% within Country	45,8%	54,2%	100,0%
	UK	Count	156	0	156
		% within Country	100,0%	,0%	100,0%
	Greece	Count	20	58	78
		% within Country	25,6%	74,4%	100,0%
	Poland	Count	8	4	12
		% within Country	66,7%	33,3%	100,0%
	Cyprus	Count	11	19	30
		% within Country	36,7%	63,3%	100,0%
Total		Count	228	120	348
		% within Country	65,5%	34,5%	100,0%

Pupils ICT equipment availability and skills vary depending on the country. In Finland every pupil stated that they use a computer at home, in the UK 94 %, in Poland and Cyprus 83 % and in Greece 64 % of pupils stated they are using computers at home. Use of the internet was also asked. In Finland 96 %, in the UK 89 %, in Cyprus 63 %, in Greece 39 % and in Poland 17 %

of pupils were using the internet at home. Pupils in Finland and UK were the most experienced with computers. Through out the whole project most of the students were using computers (87 %) and the internet (74 %) at home.

Table 3. Using the internet at home

			Do you use the internet at home?		Total
			yes	no	
Country	Finland	Count	69	3	72
		% within Country	95,8%	4,2%	100,0%
	UK	Count	138	18	156
		% within Country	88,5%	11,5%	100,0%
	Greece	Count	30	48	78
		% within Country	38,5%	61,5%	100,0%
	Poland	Count	2	10	12
		% within Country	16,7%	83,3%	100,0%
	Cyprus	Count	19	11	30
		% within Country	63,3%	36,7%	100,0%
Total		Count	258	90	348
		% within Country	74,1%	25,9%	100,0%

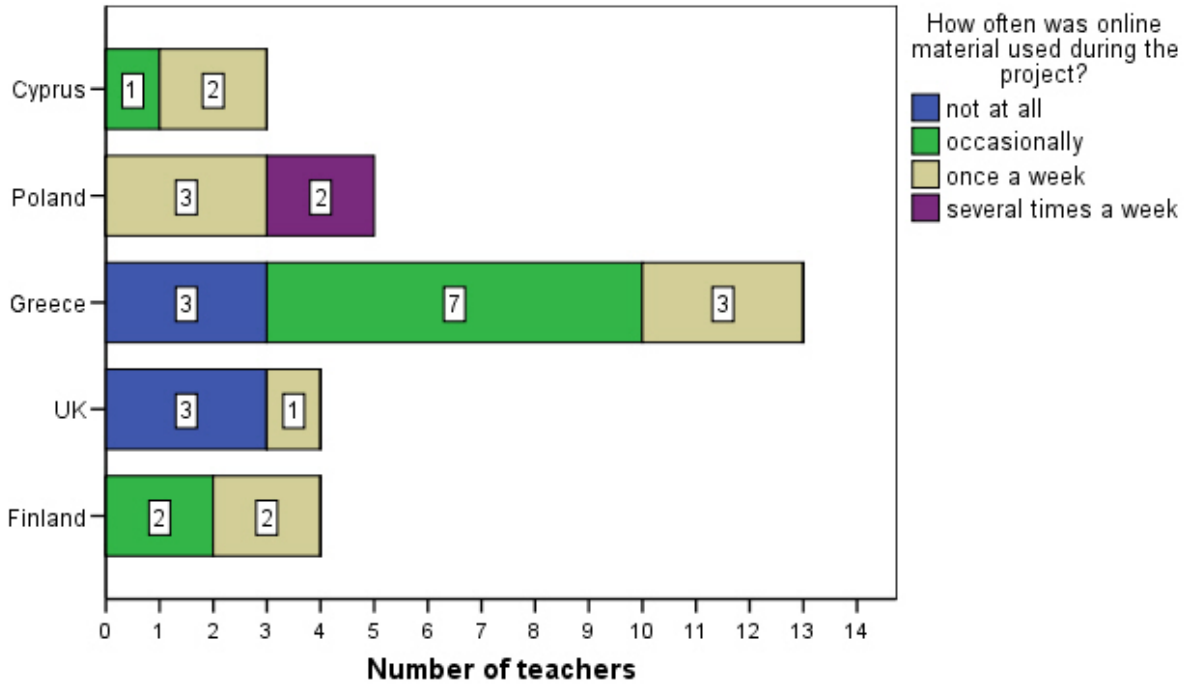
UK and Polish pupils seem to be confident when evaluating their own skill level as computer users. Through out the whole project 76% of pupils consider themselves to be good or excellent computer users and only 4% poor or reasonable computer users. It can be said that pupil's skills were sufficient to handle the challenges of the project. There were some differences between countries and they probably had some effect on the project implementation. For pupils in Finland and the UK, computers are more familiar than other partner country pupils, which can be seen, for example, in pupil responses regarding the lack of charm or novelty related to ICT lessons, and this has affected pupils' attitudes and responses to the project tasks.

6. Evaluation of the online material

The idea of the online material was that pupils could work on their own through the internet where different kinds of exercises with various difficulty levels could be completed. This can be practical when there are several different aged pupils working in the same class room and when the teacher is occupied giving a distance learning lesson or with some other activities. In Finland, according the teacher questionnaire, online teaching material was used occasionally (2) or once a week (2) during the project. The selected learning platform was the Opit platform established by WSOY educational book publishing company. In the UK online material wasn't used at all because a different approach which emphasized video-conferencing was employed. Although, one UK teacher still stated that some online material was used once a week. In Greece where the Moodle learning environment was used, three teachers hadn't used the

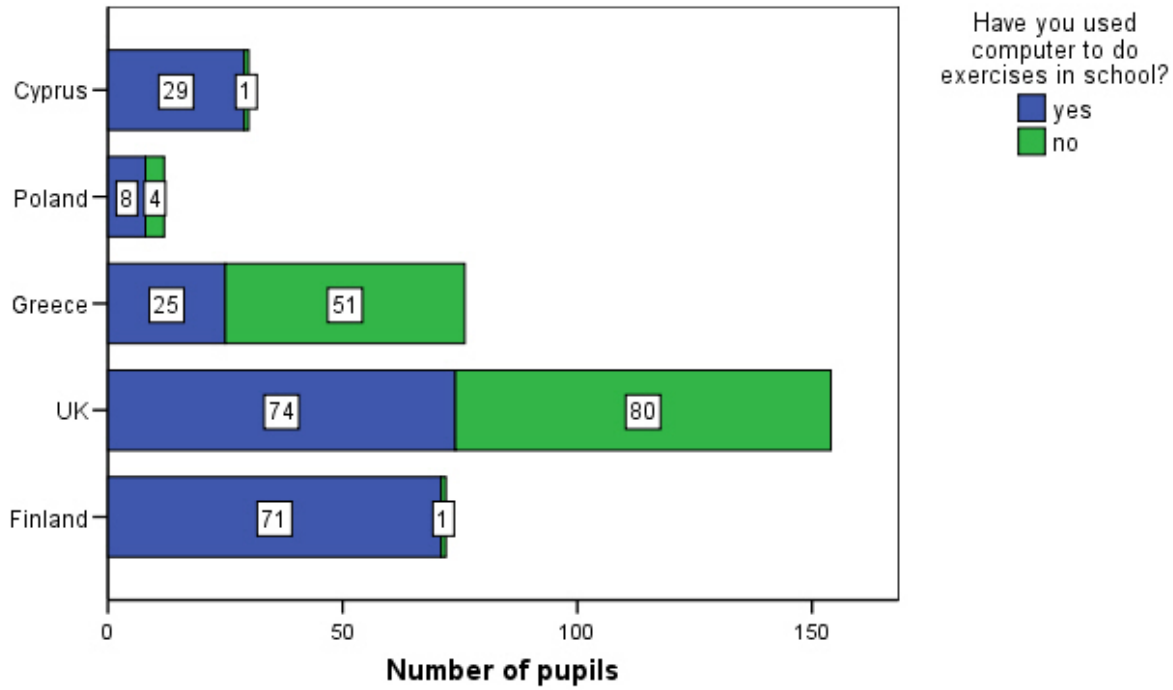
Moodle platform at all during the project and 10 teachers occasionally or once a week. In Poland Aurum was used once a week by three teachers or several times a week according two teachers. In Cyprus Moodle was used once a week (2) or occasionally (1).

Chart 1. Use of the online material according teachers by country



The pupils' questionnaire asked "Have you used the computer to do exercises in school?" As can be seen from the table, 60 % of pupils in the whole project have completed computer exercises. Pupils in the UK also answered this question which means that they have used the computer to complete exercises for other lessons not related to this project. In Greece the percentage of those doing computer exercises (33 %) is lower than in other countries.

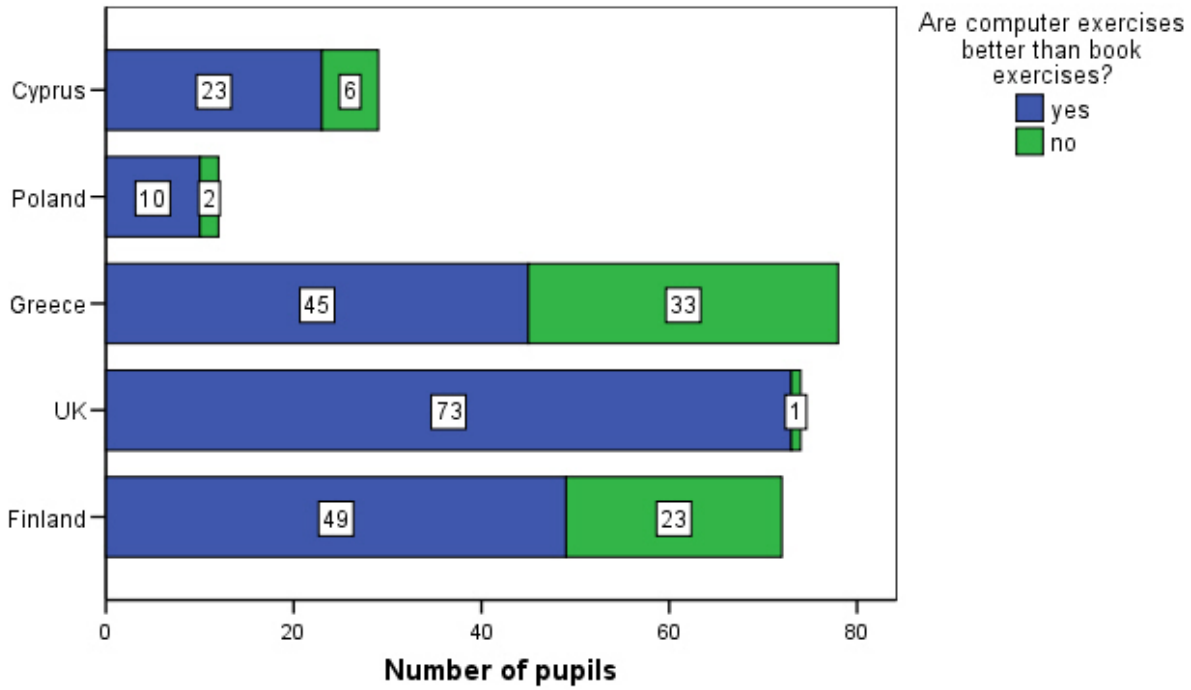
Chart 2. Use of the online material according to pupils by country



Most of the pupils find computer exercises meaningful and better than normal book exercises. It is interesting to see that in the UK only one pupil out of 74 replied that they didn't think that computer exercises are better than book exercises. This tells us that pupils did not have authentic experiences of computer exercises related to the project and they have answered on the general basis of computer use. Pupils in Greece and Finland were the most critical towards computer exercises however those who preferred book exercises were still in the minority. In the whole project only 75 % of pupils stated they would rather do exercises with computers, although the question asked from pupils was some what leading in favour of computer aided exercises.

Figure 2. Polish pupils learning English under the watchful eyes of the MustLearnIT project people at Sulejówek.

Chart 3. Using computer instead of book according to pupils by country

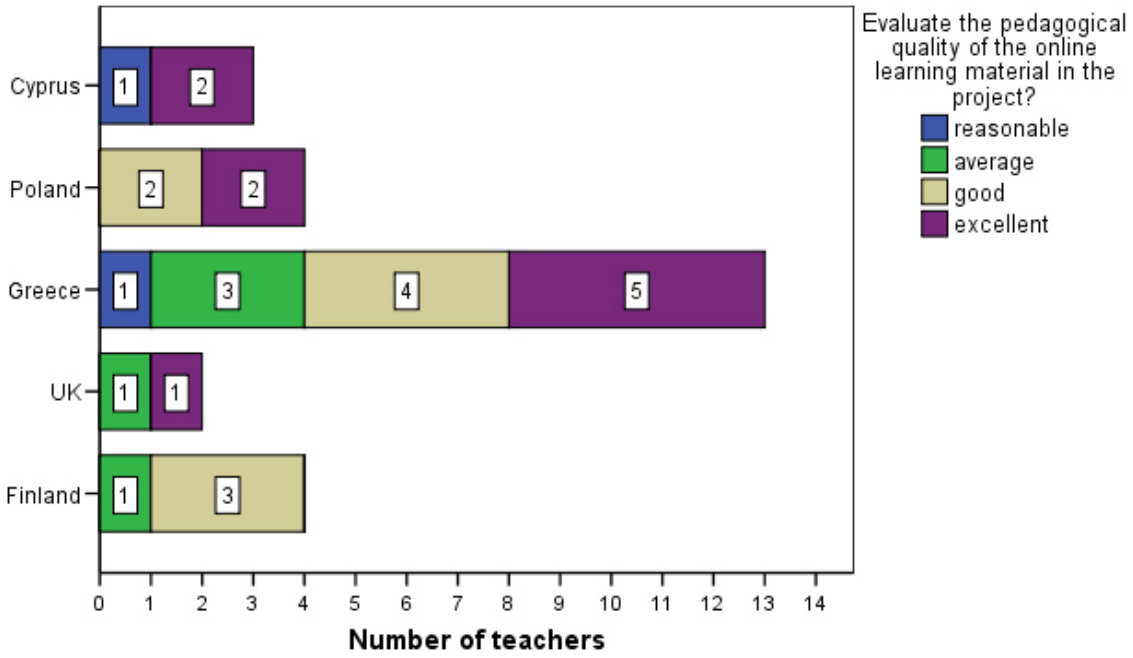


The relationship between the text book and the computer is complicated. It doesn't feel right to transform ideas from the school books more or less directly to the computer. A more solid solution is to develop exercises which exploit the multimodality of computers in a pedagogically suitable way. Computer aided learning is never a one way street where pupils communicate with machine instead of a teacher. One problem is that technology is too often recognized as a black and white issue where humans are positioned toward technology, where as, humans should be seen as more involved with that technology they have developed for certain purposes. In a school environment, a practical philosophical starting point could be the one, where computers and software are recognized as human made products. Instead of juxtaposing technology and humans the aim should be to improve the technology to encounter pedagogical and didactical challenges. However, the computer itself can't maintain pupil's motivation and provide on the spot support in the same way as teachers can in authentic human communication.

6.1. Pedagogical quality of the online material

According teachers in Finland, the pedagogical quality of online material (Opit) was average (1) or good (3), in the UK it wasn't used at all but two teachers replied anyway, in Greece, the majority thought it was good (4) or excellent (5), as well as in Poland and Cyprus. In the whole project the majority of teachers (19) considered the pedagogical quality of online material to be good or excellent.

Chart 4. The pedagogical quality of the online learning material according to teachers by country



In the Greek focus group conversation it was concluded that online material was popular among the pupils:

> *Most EFL teachers agreed that the material that was created and uploaded on the Moodle platform was very high quality and motivating for their learners. The multigrade teachers reported that they did not always try to ask their learners to access that platform and carry out activities, but that, whenever this was done, the pupils enjoyed doing the tasks (FCGre).*

Teacher's attitudes or possible misunderstandings play an important role in the practical implementation of the project. The importance of training and the commitment of the teachers in the projects should never be under estimated:

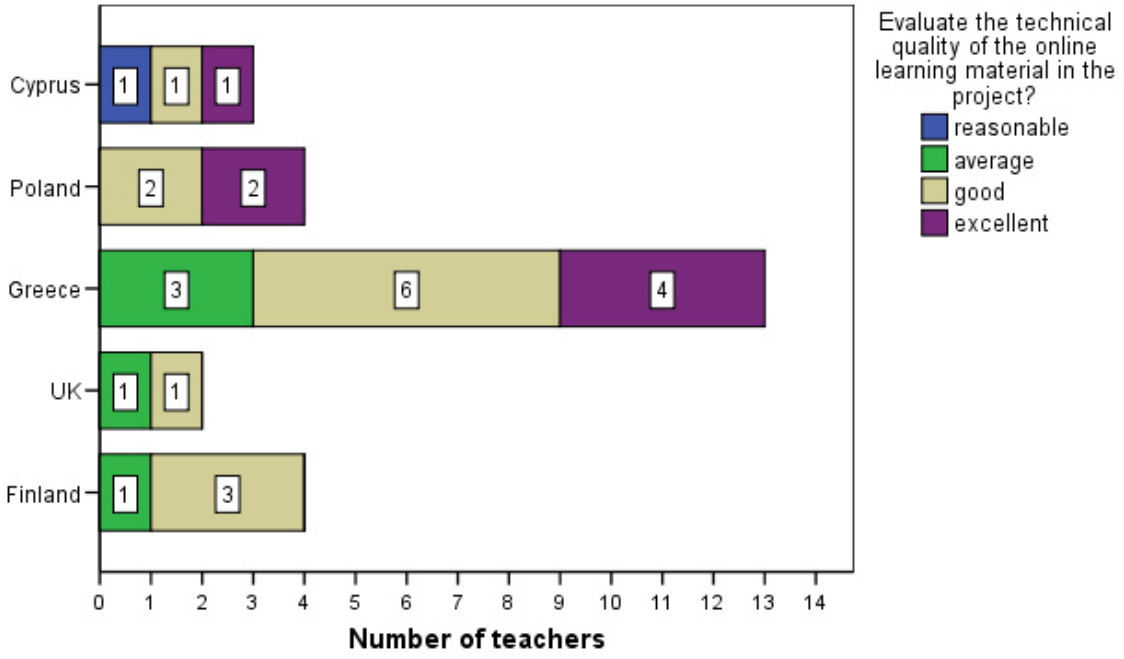
> *One EFL teacher said that she did not understand the function of the Moodle platform, She thought that the multigrade pupils would use the platform offline in the same way that they would do their homework at home, but did not access the site to see what was on it (FCGre).*

6.2. Technical quality of the online material

Finnish teachers considered the technical quality of the Opit platform to be average (1) or good (3). In Greece the Moodle platform was evaluated as average by three teachers, good by six teachers and excellent by four teachers. In Poland, the Aurum platform was evaluated as reasonable by one teacher, good by one and excellent by one teacher. In Cyprus the technical quality of the Moodle platform was evaluated as good or excellent. In the whole project, the

majority of teachers (20) were satisfied with the technical quality of the online learning material.

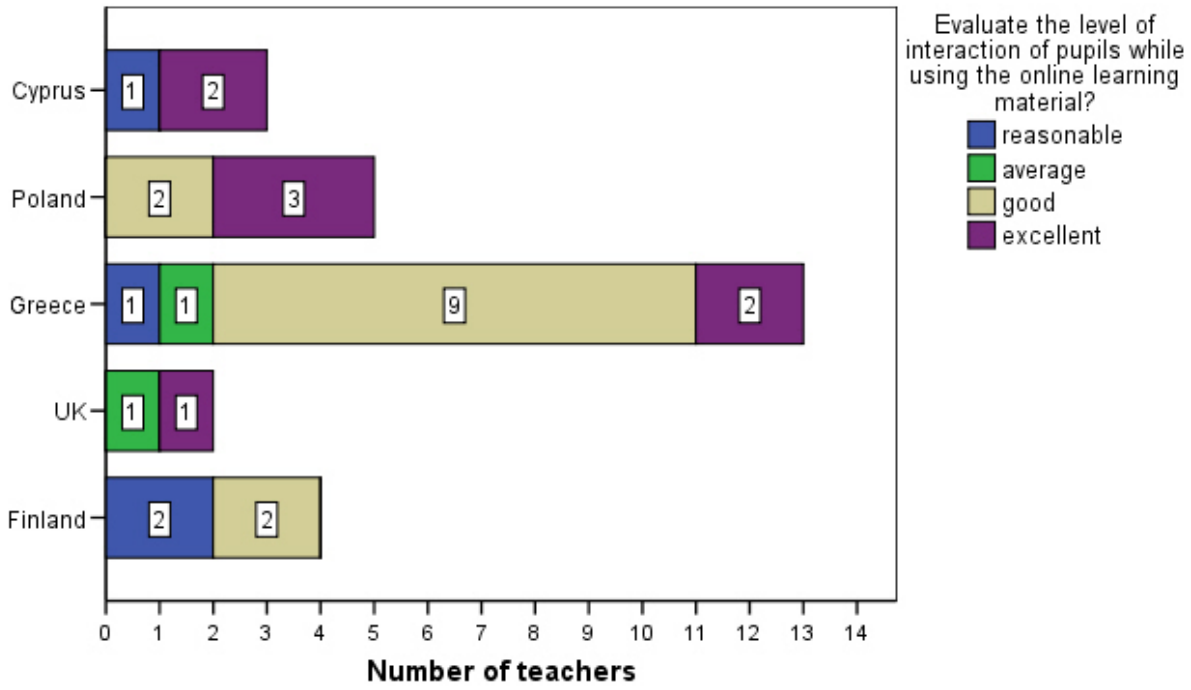
Chart 5. The technical quality of the online learning material according to teachers by country



6.3. Pupils level of interaction while using online material

Measuring the interaction level while using online material is not actually an accurate question because interaction can be understood either, as interaction between human and computer, or as interaction with other pupils when doing exercises. Teachers in Finland and Greece estimated pupils' interaction level questionably, and in Finland no teachers evaluated it as excellent, but in Poland it was thought to be good or excellent and in Cyprus one teacher saw it as reasonable and two others as excellent.

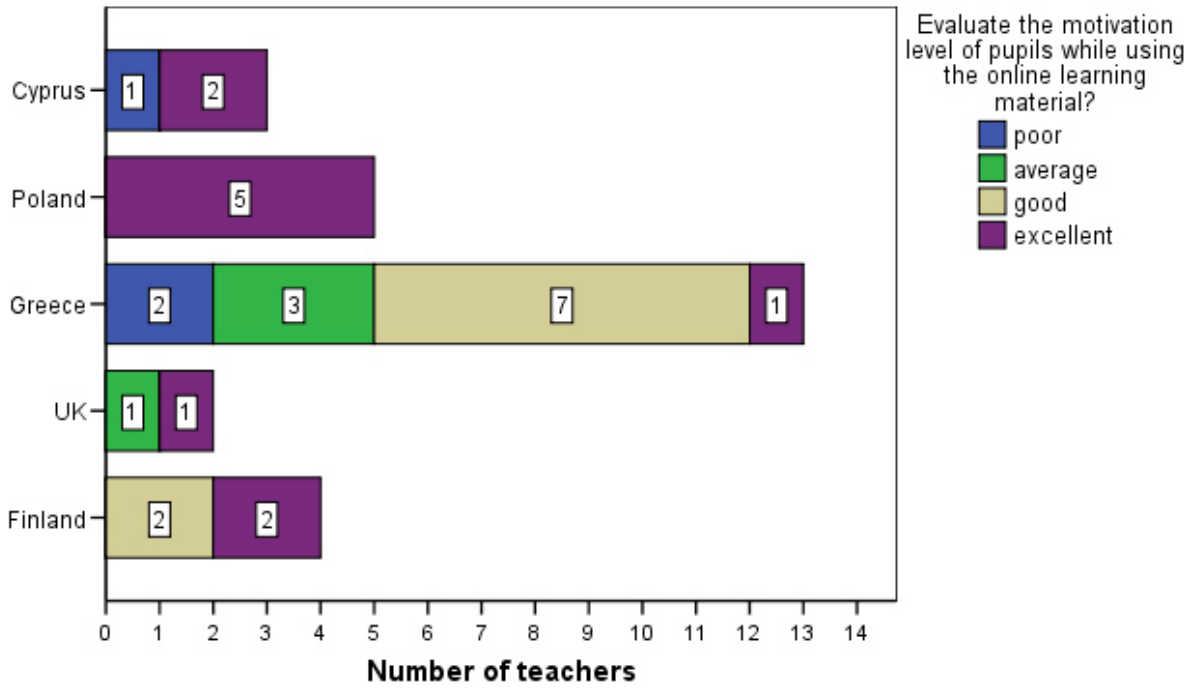
Chart 6. The pupils level of interaction while using the online material according to teachers by country



6.4. Pupils motivation when using online material

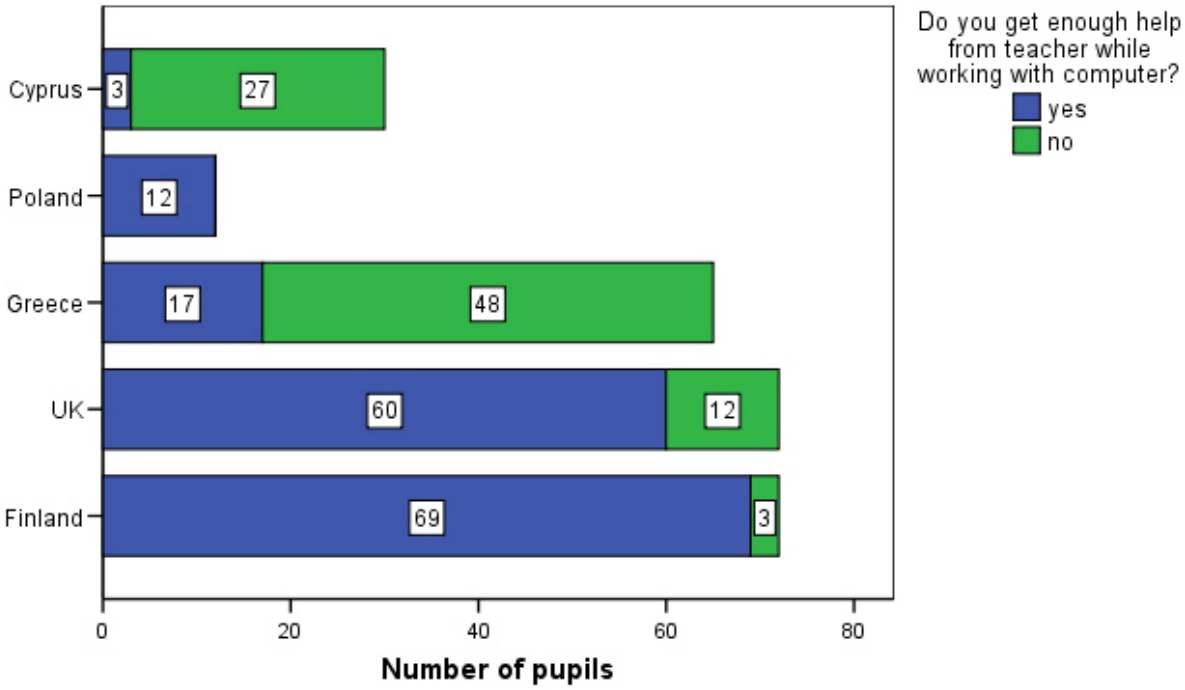
In Finland pupils' motivation level according the teachers while using the Opit platform was estimated to be fairly satisfied. Two of the teachers estimated it to be good and another two as excellent. In Greece five teachers saw it as poor (2) or average (3); seven teachers thought it was good and one teacher that it was excellent. In Poland all five teachers saw pupils' motivation level as excellent. It looks as though online learning methods have been adapted very well and with enthusiasm in Poland. In Cyprus one teacher estimated motivation to be poor and the remaining two teachers estimated it to be excellent. One very good reason why the majority of teachers (20) consider the online learning material to be well motivating is that it gives teachers more opportunity to consider, and give attention to, learners of different levels or pupils with special needs. At the same time it gives the teacher more freedom to share teaching time more effectively in the multigrade classroom. It can be assumed, when that happens, pupils will get more individual attention and the motivation of pupils will increase.

Chart 7. The motivation level of pupils while using the online material according to teachers by country



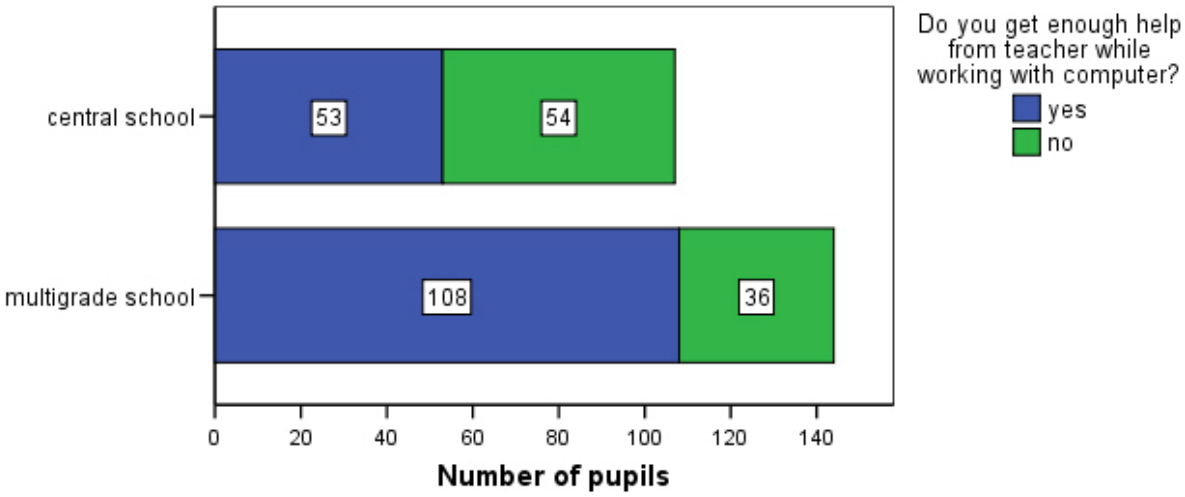
One way to measure the motivation level of pupils is to ask, did they get enough help from the teacher while working with computers. In Poland all the pupils got enough help from the teachers, in Finland 96 % and in the UK 83 % felt that the help level was sufficient but in Greece 26 % and in Cyprus only 10 % pupils felt that the teachers' capacity to help was sufficient. There is quite a clear difference between countries, which can be identified either as an attitude or skill based problem, or sometimes both. In Greece, the explanation can more likely be that the majority of pupils (67 %), according their own statement, didn't use online material at all.

Chart 8. Getting help from the teacher while using the online material according to pupils by country



If we look at the same numbers within schools position, it looks as though pupils in Greece and Cyprus multigrade schools were more satisfied with the level of teachers' help than in central schools. This can be explained with the fact that in multigrade schools teachers probably had more time to help pupils than in the central schools, where the teachers were sharing their attention between the technology and the multigrade class room(s) pupils.

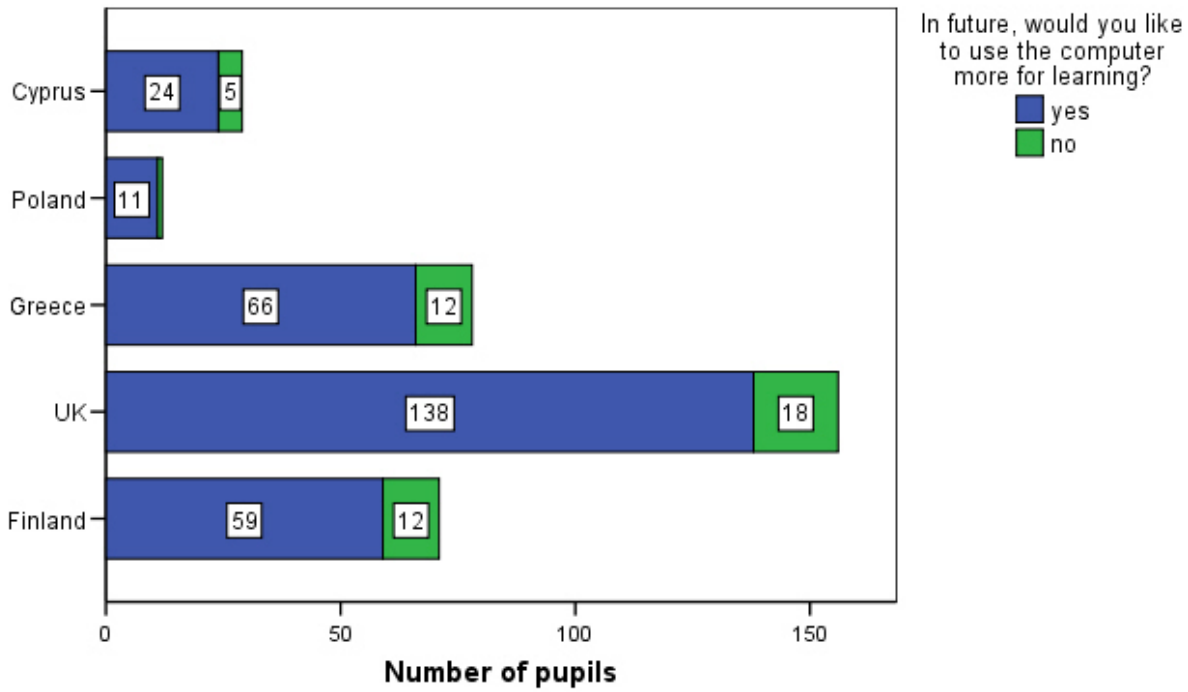
Chart 9. Getting help from teachers while using the online material according to pupils by schools' position



Pupils were also asked directly, do they want to use the computer more for learning in the future. The idea of the question is to measure how pupil's experiences within the project,

reflects towards future expectations. In Finland, Greece and Cyprus, more than 80 % of pupils wanted to use computers for learning in the future. In Poland only one pupil out of 12 did not want to use the computer more for learning in the future. Results of the whole project are quite unambiguous. Most of the pupils (86 %) are willing to use computers more for learning in the future. It can be said that among the pupils, computer aided learning does have fertile ground and the MustLearnIT project has probably strengthened it, especially among the ICT newcomers.

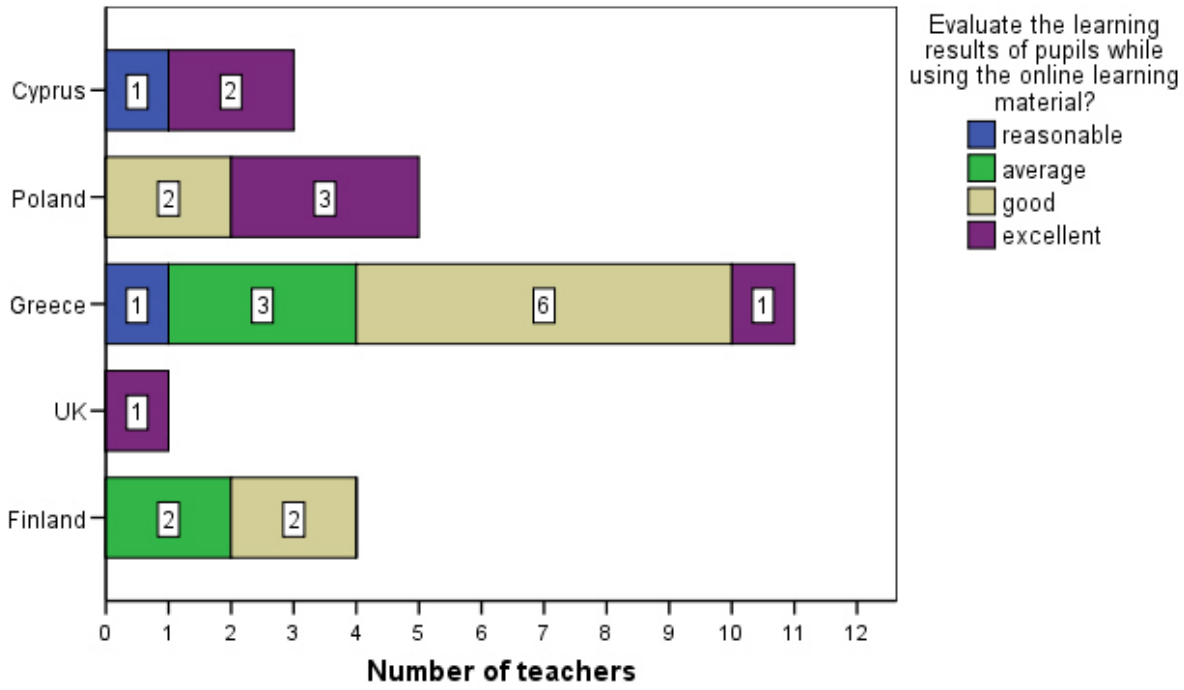
Chart 10. Willingness to use more computers for learning in future according to pupils by country



6.5. Learning results when using online material

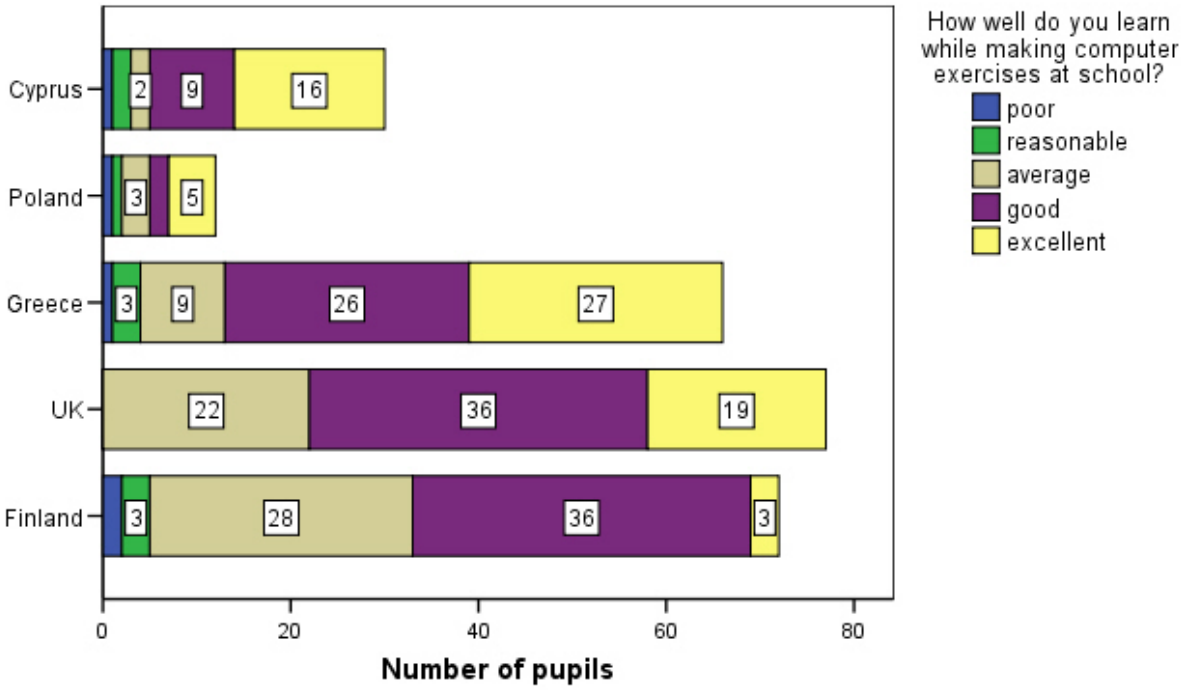
Teachers were asked to evaluate pupils' learning results while using the online material. Finnish teachers estimated the learning results to be average (2) or good (2). In Greece one teacher estimated it to be reasonable, three average, six good and one excellent. Polish teachers saw learning results as good (2) and excellent (2) and in Cyprus one teacher thought they were reasonable and two that they were excellent. In the whole project the learning results were seen to be more positive than negative because 17 out of 24 teachers saw results as good or excellent.

Chart 11. The learning results of pupils while using the online material according to teachers by country



When pupils were asked to evaluate their own learning while doing computer exercises, there weren't any big differences between countries. In Finland pupils seem to be bit more critical than other countries. In Finland only three pupils (4 %) estimated learning to be excellent. Meanwhile in Greece, the UK, Poland and Cyprus pupils were pretty unanimous with many pupils considering their learning to be excellent. In the whole project self evaluated learning was estimated as poor by 2 % of pupils, reasonable by 4 %, average by 25 %, good by 42 % and excellent by 27 % of pupils. The majority of pupils estimated learning to be good or excellent, so it can be said that on the whole pupils enjoy completing exercises using the computer and consider it possible to learn this way.

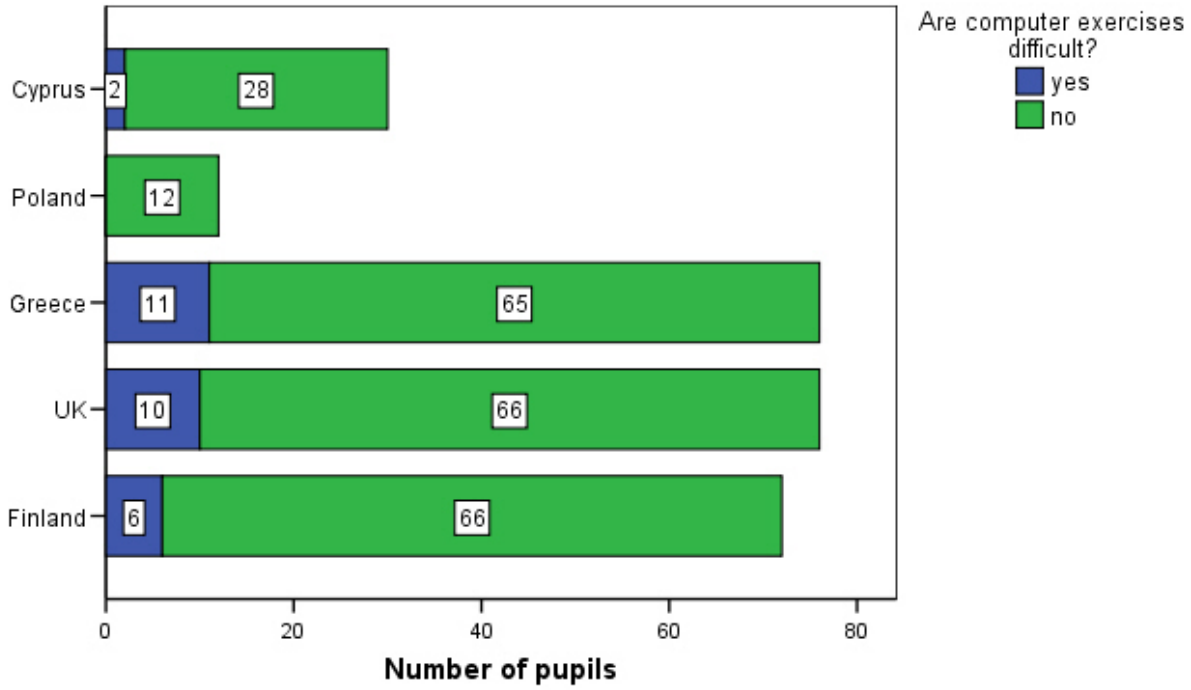
Chart 12. Pupils' self evaluated learning while making computer exercises by country



Some of the students were more motivated while using computers for school work. One of the Finnish teachers thinks that ICT creates a new kind of equality among students because boys are achieving the same levels of motivation as girls when computers are used. Technology seems to provide boys with the permission to do their best with school work. Finnish teachers also thought that pupils are in many cases learning better because sometimes pupils felt that they had made double the work, first with the normal text books and then with computers (FCFin).

One way to evaluate pupils learning is to ask, do they think that the exercises are difficult. Only 11 % of pupils thought that computer exercises were difficult but the majority 89 % saw them as not difficult. This indicates that the exercises were not directed in the most effective way. It can be assumed that if the "intellectual friction" or challenge is missing totally, exercises are more fun than learning. Learning always aims for changes in a person's attitudes and knowledge base causing some pain while a person uses their brain capacity. In the UK and Greece there were a few more pupils who found the exercises more difficult than in other countries. This probably indicates that the exercises were pedagogically more appropriate, though, in the UK exercises were not related directly to the project.

Chart 13. Difficulty of computer exercises according to pupils by country



7. Evaluation of the distance learning lessons

Distance learning lessons were the back bone of the MustLearnIT project. They were arranged in three different ways, or it could be said, according to three different philosophies. In Greece, Poland and Cyprus, the interactive Centra platform was used. Centra is a software based communication environment where video, audio, text and illustrations are brought all together in the same platform, a kind of virtual class room. There are many advanced features in Centra, for example, sessions can be recorded and watched again later. The Centra server was located and maintained in Greece by the project coordinator. In Finland, during the first and second rounds of implementation video conferencing was used to connect class rooms. On the third round of implementation, videoconferencing was replaced with Connection Pro platform. In the UK videoconferencing was used as well but without the presence of central class room pupils. The UK model could be called the direct videoconferencing model.

During the project, the total amount of distance learning lessons arranged in all five countries was 219 lessons. According to the amounts stated in the teacher questionnaire, in the UK there was an average value of 100 distance learning lessons during the project, in Finland 20 distance learning lessons was accomplished, in Greece 63 lessons, in Poland 10 lessons and in Cyprus eight lessons. However, in Greece totally 81 distance learning sessions have taken place in three geographical areas (Cyclades: 21 sessions, Evritania: 13 sessions, Ioannina - Group A: 29 sessions, Ioannina - Group B: 18 sessions).

If looking at the amount of distance learning lessons in different countries, it can be said that the scope of the implementation has been quite variable by country. Ten or less distance learning lessons gives a very different idea of distance learning if compared to for example the UK's 100 and Greece's 81 videoconferencing lessons. The given numbers reflect quite well other results presented in this paper. It is interesting to notice that more experience in distance learning seems to develop more critical attitudes both within teachers and pupils. That can be explained by the expectations and excitement experienced through ICT aided learning generally. It looks like experienced ICT users are more able to see weaknesses as well. Weekday reality of ICT use reveals all the aspects of the distance learning, where as, ICT newcomers do have more optimistic future expectations related to ICT. Similar results were obtained from Kaustinen College of Music when ICT based school work was tested among the students and teachers there (Luoto 2004: 52).

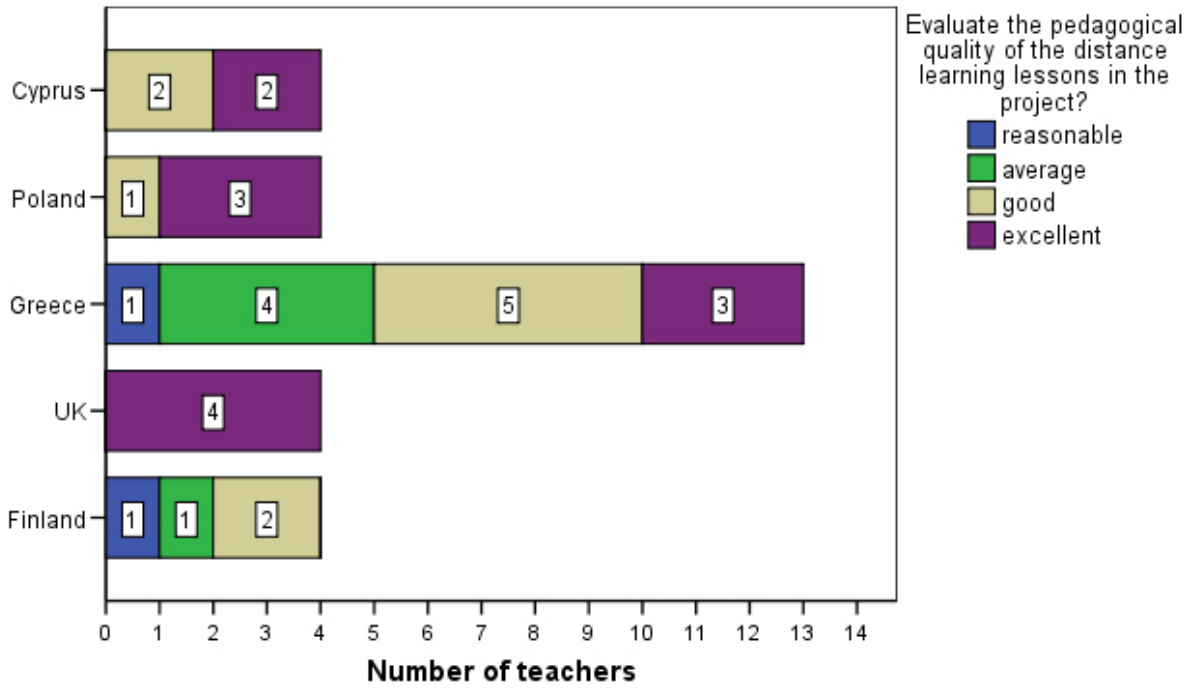
The Centra platform was tested in the UK but not adapted into the model. Differences between the Centra platform and videoconferencing were commented on in the UK focus group memo briefly:

> *The Centra platform was used for follow up work with a foreign language assistant with two pupils each week following the videoconferenced lesson. This had not been so successful. More time needs to be invested in training how to use the software, both for teachers and pupils. It seems very difficult to get on-line. The time delay difference makes it very slow. It's difficult for the children, they have to hold the control button, wait for three second to speak which interrupts the flow. Pupils find this very slow compared to the videoconferencing which is very immediate. Pupils would prefer videoconferencing in small groups. The remote school teachers feel setting up Centra is a lot of effort for a few minutes learning (FCUni).*

7.1. Pedagogical quality of the distance learning lessons

Pedagogical quality is challenging task to measure unambiguously. Evaluation of this factor is pretty much on the teachers' personal shoulders: How they feel about the project tasks when reflecting on the experiences of the distance learning lessons in relation to their own professional practises. All four teachers in the UK thought that the pedagogical quality of the distance learning lessons was excellent. In Poland and Cyprus half of the teachers saw the pedagogical quality as good and the other half as excellent. In Finland one teacher thought it was reasonable, one that it was average and two stated it was good. Finnish teachers seem to be most critical about the pedagogical quality of distance learning lessons. In the whole project the majority (22 out of 29) of teachers saw it as good or excellent, one didn't reply.

Chart 14. The pedagogical quality of the distance learning lessons according to teachers by country



Some teachers gave comments that were specifically about the pedagogical quality of distance learning lessons. One teacher from the UK commented that the audience and excitement of the video-conferenced lessons gave added value to pupils' learning:

> *Useful for pupils to interact with pupils from other schools, gives pupils an audience and purpose for their learning (TUni002)*

Polish teachers saw distance learning lessons as motivating for pupils:

> *Lessons were lead in a very professional way. Students were absolutely not afraid of participation. They were waiting for these lessons all week. (TPol003)*

Also some critical voices of teachers raised concern about the lack of authentic human interaction. Especially Greek teachers had sharply defined comments about the pedagogical quality of the distance learning lessons:

> *There has to be face-to-face contact in order to have excellent pedagogical quality (TGre001)*

> *The pedagogical approach is average because up to a time the immediacy between the student and the teacher as well as the emotional contact is restricted (TGre012)*

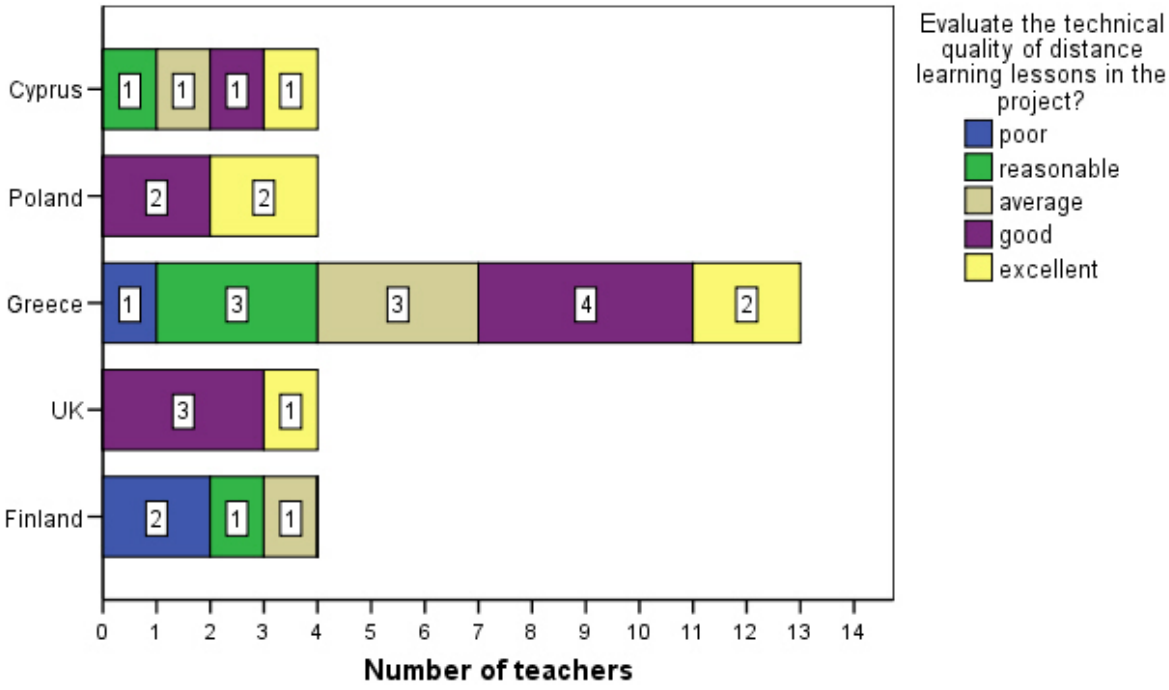
Also it was said:

> *Not all language skills can be practised easily (e.g. writing, dictation) (TGre004)*

7.2. Technical quality of the distance learning lessons

Teachers in the MustLearnIT project were asked to evaluate the technical quality of the distance learning lessons in the teachers' questionnaire. Two Finnish teachers considered the technical quality to be poor, one reasonable and one average. Three teachers from the UK thought that the technical quality was good and one teacher considered it to be excellent. It looks as though there were less technical restraints in the UK than in other countries. In Greece the dispersion of opinions was wider: Four of the teachers considered the technical quality to be poor or reasonable, three teachers stated it was average and six teachers thought it was good or excellent. In Poland the technical quality was thought to be good (2) or excellent (2) and in Cyprus all 4 teachers had individual opinions between reasonable and excellent.

Chart 15. The technical quality of the distance learning lessons according to teachers by country



The technical quality of the distance learning lessons was an important issue for teachers and provoked many responses in the questionnaire. Most of the teachers' questionnaires comments dealt with technical problems. The biggest issue for teachers, the area most criticised by them was the unreliability of the technology used in the project. When equipment is not working or a connection fails, teaching and learning are prevented by outside factors.
Unexpected technical interruptions of lessons were the nastiest things according to teachers:

> *Sometimes the connection has disappeared; children were out of the lesson in an unexpected way. Small amount of computers, problems with speakers (TPol001)*

> *The lessons process is impeded due to technical problems such as server breaking and audio problems (TGre009)*

> *Connection failure, no participation in the lessons (TGre006)*

Also some problems with low quality internet connection were reported:

> *Lack of the possibility to connect or low quality of connection have negative impact on the lesson (TPol004)*

> *Due to slow network speed which is a problem in our area (TGre003)*

Problems with quality of sound and the picture were reported in a few comments:

> *Sometimes I could not be heard, prior to using headphones, so having to repeat everything a million times was delaying the process (TGre009)*

> *I had to use headphones in order to be more clearly heard. My students were murmuring in class was making communication difficult (TGre009)*

A Polish teacher seems to be more satisfied with the technology even if some technical problems were reported in project meetings:

> *There were no major problems. If there were some, we usually managed to deal with it at once. Organisers helped us by the telephone and they were giving us specific procedures for the start of the lesson. (TPol003)*

In the Finnish implementation, according to the focus group conversation, there were some problems to get the videoconferencing to work smoothly especially during the third round of implementation:

> *One teacher is saying that for her this experience has been mainly good, autumn especially was good but spring time session had too many technical problems and it was a little disappointment (FCFin).*

Pupils were excited about distance learning lessons even if the technical problems caused some disappointments:

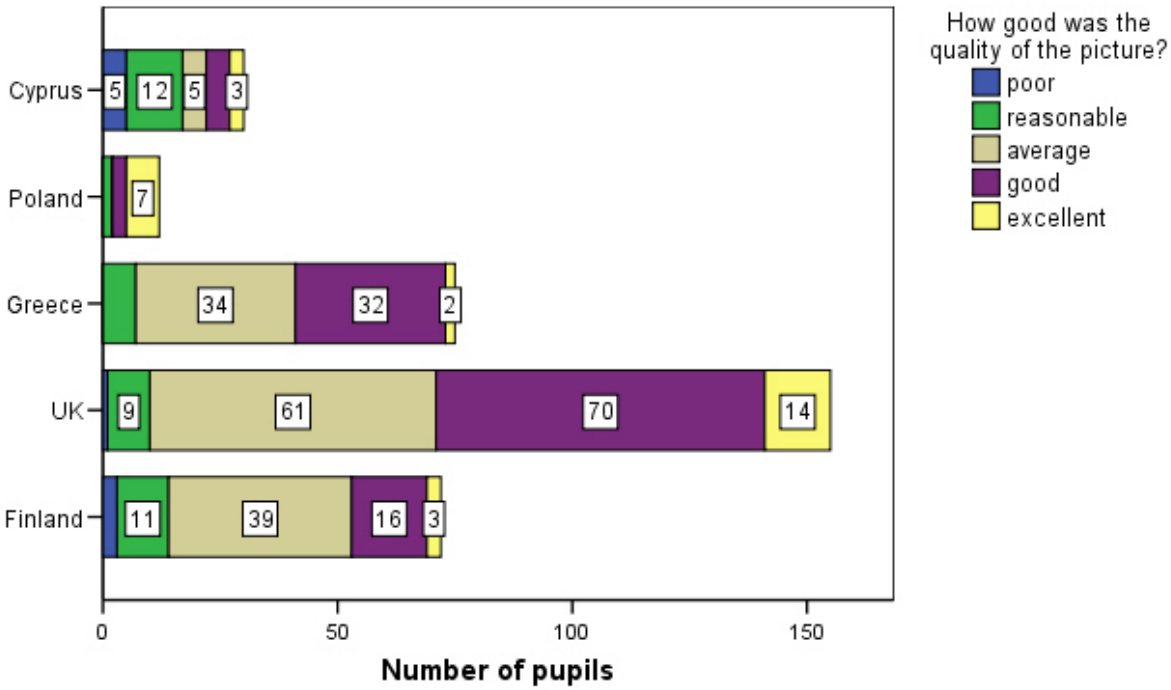
> *After a few drawbacks with technology, pupils felt a bit frustrated and started to ask does it works today already in the mornings when they arrived to school. Pupils were waiting distance learning lessons and they were excited about them (FCFin).*

Through out the whole project, nearly all the pupils (98 %) have seen a teacher on the screen or on the computer display. The quality of the picture could have been better because only 8 % of pupils thought that it was excellent. Most of the pupils found the quality of the picture average or good (77 %) and 15 % of pupils saw it as poor or reasonable. This is indicating that the

technical quality of the picture in lessons could have been better to achieve more motivating learning.

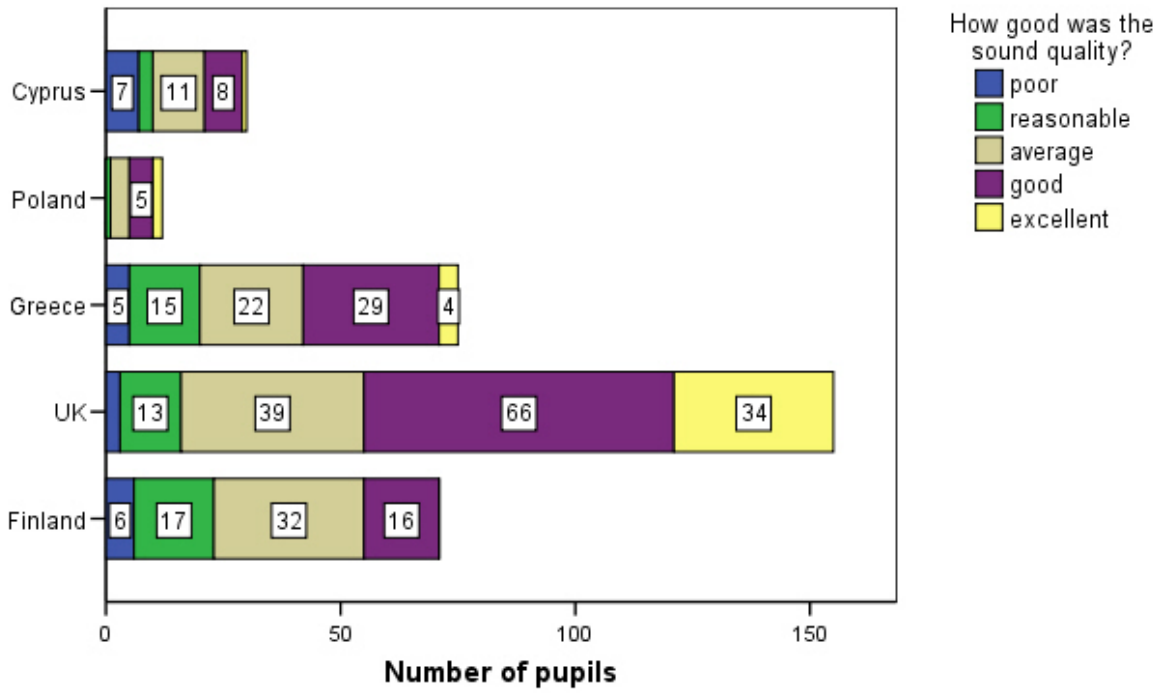
Figure 3. Maila is teaching English for Finnish pupils in Vionoja multigrade school at Ullava where the project people visited 27th of October 2006.

Chart 16. The quality of the picture during the distance learning lessons according to pupils by country



12% of pupils thought that the quality of sound was excellent. Most of the pupils thought that sound quality was average or good (67 %), and 20 % of pupils found it poor or reasonable. Similar to the results regarding picture quality, sound quality could have been better especially when the special subject being taught is a foreign language. Differences by countries were noticeable: in the UK pupils have been more pleased about the quality of sound than other countries. In Finland pupils considered the quality of sound to be a little bit lower than other countries.

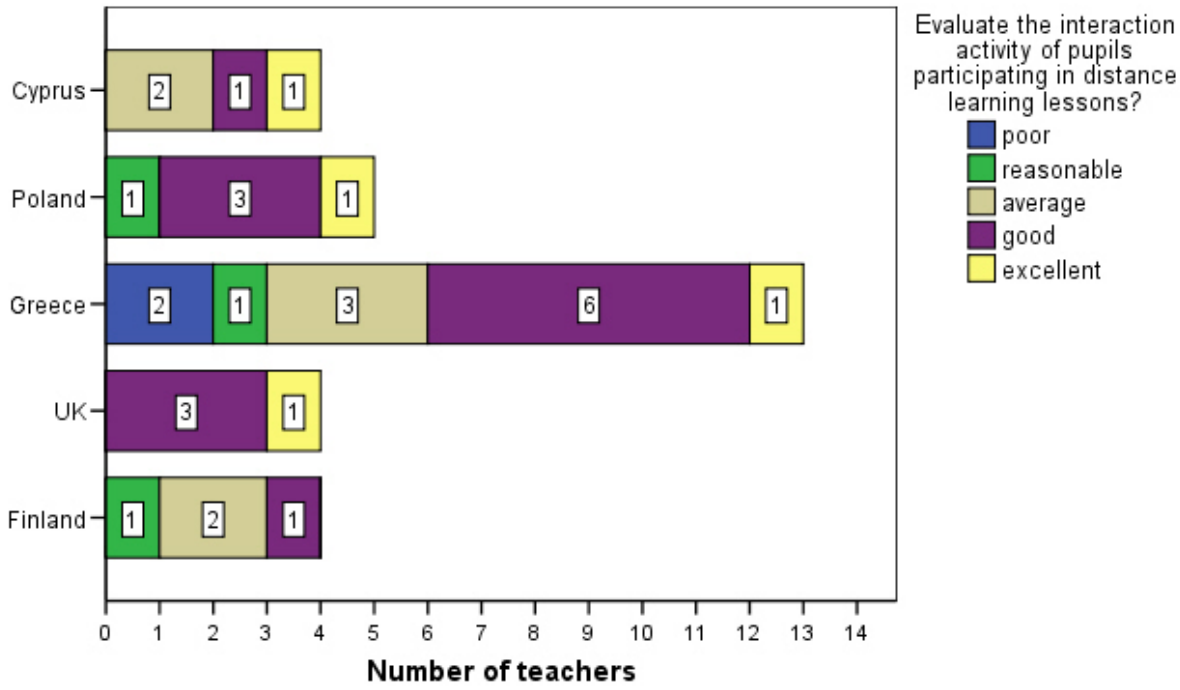
Chart 17. The quality of the sound during the distance learning lessons according to pupils by country



7.3. Pupils interaction level during the distance learning lessons

Exchanging ideas, concepts and experiences; with a teacher who is more knowledgeable, or with peers, is fundamental to good learning taking place. Teachers were asked to evaluate the interaction activity of pupils participating in the distance learning lessons. Some dispersion can be seen in the answers. It looks as though using technology doesn’t provide as many opportunities for natural interaction to occur, if compared to normal face- to face teaching. However, the results for the project as a whole show that although five teachers saw interaction activity as poor or reasonable, seven considered it to be average, and according to 14 teachers it was good and four teachers thought that the pupils interaction level was excellent.

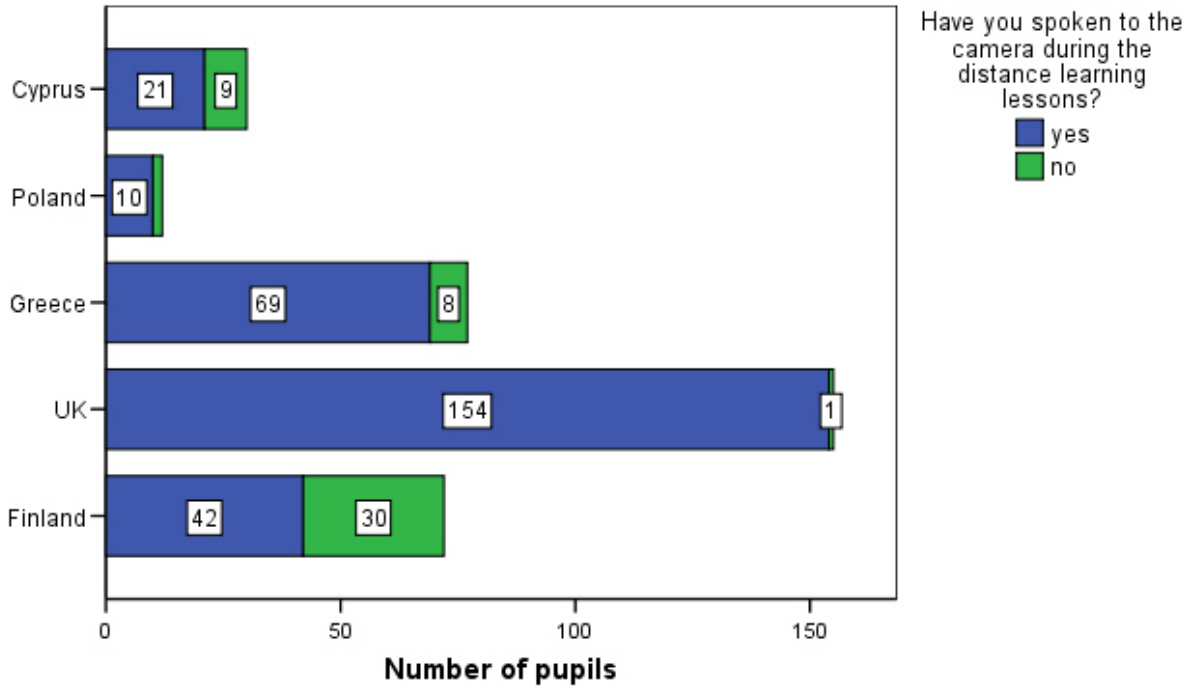
Chart 18. The interaction activity of pupils participating in distance learning lessons according to teachers by country



There were small differences between Finland and other countries concerning the activity level of pupils when participating in distance learning lessons. In the pupils' questionnaire it was asked have you spoken into a microphone or have you spoken to the camera during the distance learning lessons? In the UK 99 % of pupils announced that they have spoken to the camera, mean while in Finland only 58 % responded that they had spoken to the camera. This can be explained mostly by the different approaches chosen in the implementation of the distance learning lessons, but also cultural differences might have had an effect. Maybe teachers in other participating countries encourage pupils to use language more during the language lessons. Also technical problems in Finland have affected these results, as one Finnish teacher comments in the questionnaire:

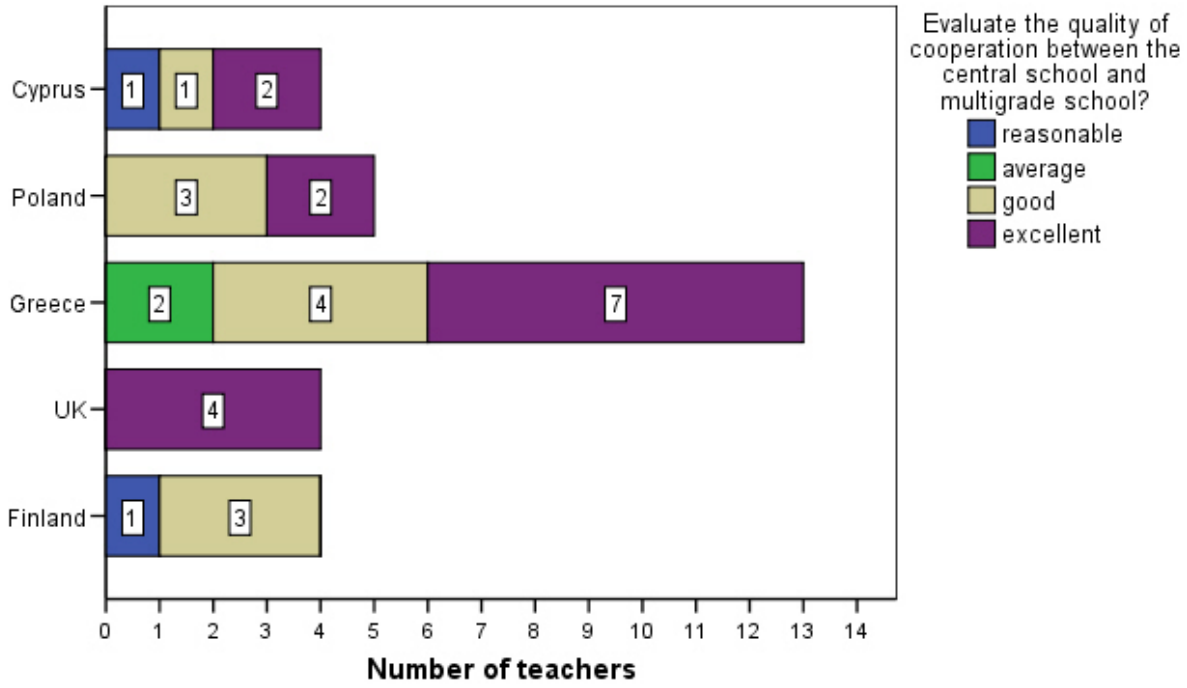
> *This model is quite dependent on technology. When teaching 1 to 6 grades, there should be various activities and noticeable interactivity between teacher and pupils. This means good sound quality, especially in language teaching where the sound is essential (TFin004).*

Chart 19. Speaking to the camera according to pupils by country



Teachers were asked to evaluate the quality of cooperation between the central school and multigrade school. Cooperation between schools can be seen as an infrastructural aspect of the project when investigating the possibilities for interaction between pupils and between pupils and teacher. If cooperation works well, it will create a better ground for interaction between schools and between teachers and pupils. One Finnish teacher thought that cooperation was reasonable and the other three that it was good. All four UK teachers saw cooperation as excellent. The UK's project implementation has apparently worked well. Meanwhile, in Greece, two teachers thought the cooperation was average, four teachers that it was good and seven considered it to be excellent. Three Polish teachers thought that cooperation was good and two thought it was excellent. In Cyprus one teacher saw it as reasonable, one good and two excellent. Through out the whole project two teachers evaluated the quality of cooperation as reasonable, two teachers average, 11 good and 15 excellent. Clearly the majority of the project teachers (26) considered cooperation to be effective, evaluating it as being good or excellent.

Chart 20. The quality of cooperation between the schools according to teachers by country



One fragment from the Finnish focus group conversation memo was arguing that there might not be any real interaction between the schools:

> *Three groups brought together doesn't work because they are really not interacting with each other. Central school teacher doesn't have enough time for individual pupils. Even the names of pupils are difficult to know, teachers were saying (FCFin).*

In Greece teachers have managed to do some shared activities:

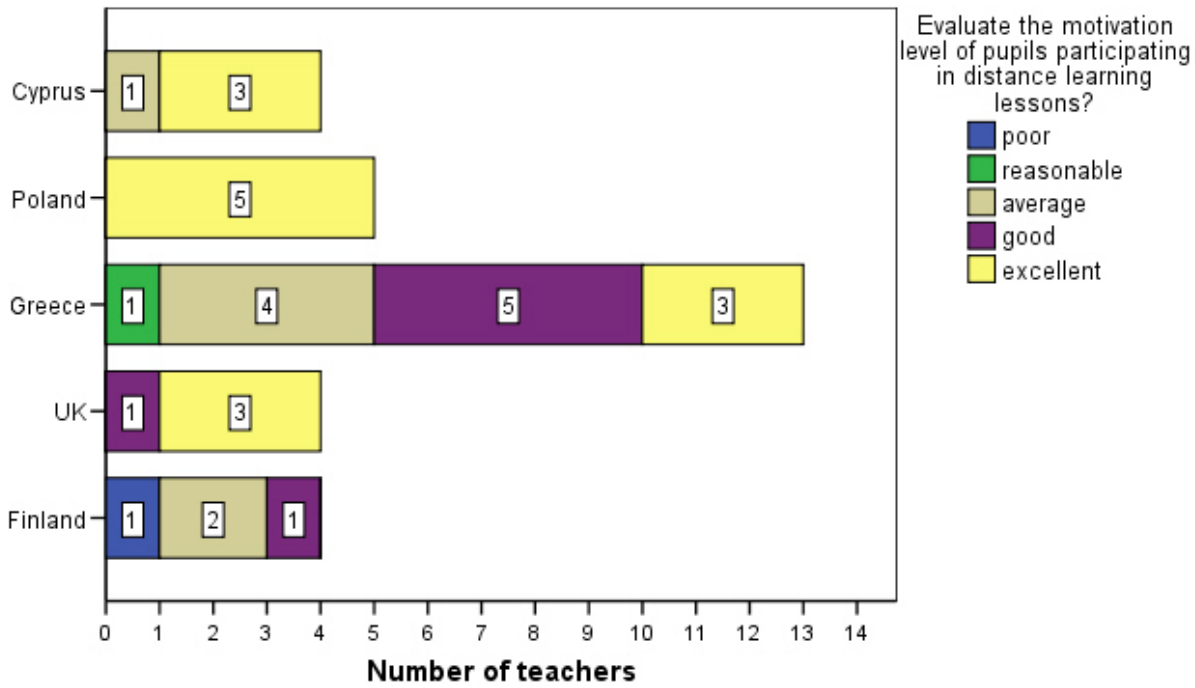
> *That said, there were cases (in the case of one EFL teacher for example), where attempts were made to integrate both classes into one. This was achieved through carrying out shared activities, having the pupils from both classrooms interact orally, etc. This meant "playing around", to some extent, with the current school curriculum for EFL, but it did not hinder the distance class from continuing at roughly the same pace with the central one (FCGre).*

7.4. Distance learning and pupils' motivation

Teachers were asked to evaluate the motivation level of pupils participating in distance learning lessons according to their own intuition. One Finnish teacher thought that the motivation level of pupils participating in distance learning lessons was poor; two teachers estimated it to be average and one good. Finnish teachers had slightly more critical answers than other countries. Three of the UK teachers estimated motivation levels as excellent and one good. In Greece eight teachers saw motivation levels as good or excellent, four average and one teacher reasonable. Polish teachers were unanimous with the same opinion that motivation

level was excellent. In Cyprus one of the teachers thought it was average and three that it was excellent. Through out the project as a whole 21 teachers out of 30 estimated pupils' motivation levels to be good or excellent. It can be concluded that from the view point of the MustLearnIT project, the motivation level of pupils according to the teachers, has been more than sufficient when distance learning lesson were given.

Chart 21. The motivation level of pupils participating in distance learning lessons according to teachers by country



Pupils' motivation has been especially good in the Polish and UK implementation:

> *Pupils love it. It works across the board. Pupils who have learning difficulties often excel at language lessons. Because they spend so much time listening and taking things in their listening skills are good, they mimic well and their accents are good. As it's oral they are able to shine. They know they are not going to have to do a test in it so they can really enjoy it. It evens the playing field for children with learning difficulties. All pupils are enthusiastic and motivated (FCUni).*

Pupils were also asked directly; Are the distance learning lessons better than normal lessons? The idea of the question was to provoke pupils to reveal what they were really thinking about the distance learning lessons. However, it is good to remember that the concept of "betterness" can contain many ideas about the distance learning lessons. In Cyprus 97 % of pupils thought they are better, in Poland 75 %, in Greece 69 %, in Finland 57 % and in UK 46 % of pupils thought that the distance learning lessons are better.

A similar trend can be seen by countries when asked would pupils like to have more distance learning lessons in the future. Through out the whole project 63 % of pupils would like to have

more distance learning lessons. It can be concluded that accumulated experiences of pupils concerning ICT teaching and learning forms more critical attitudes, or more likely, pupils attitudes are approaching the normal situation, where ICT based learning doesn't have any special status. If looking at the amount of arranged distance learning lessons during the project, the rank of the countries correlates negatively, more lessons creates more critical attitudes.

It was also noticed that in Finland and Greece there was a difference between multigrade and central schools: Centrals schools pupils are more optimistic with their opinions than multigrade schools pupils. This cap was clearly visible especially in Finland where 46 % of multigrade school pupils (in Greece 65 %) stated that distance learning lessons are better than normal lessons and in central school 67% (in Greece 71 %) of pupils had that opinion. The UK only had multigrade pupils, where as Polish and Cypriot samples were too small to make any conclusions regarding the position of the school. However, it can be assumed that with a bigger sample results would have been quite similar to Finland and Greece in Poland and Cyprus as well.

Chart 22. Willingness to have distance learning lessons instead of normal lessons according to pupils by country

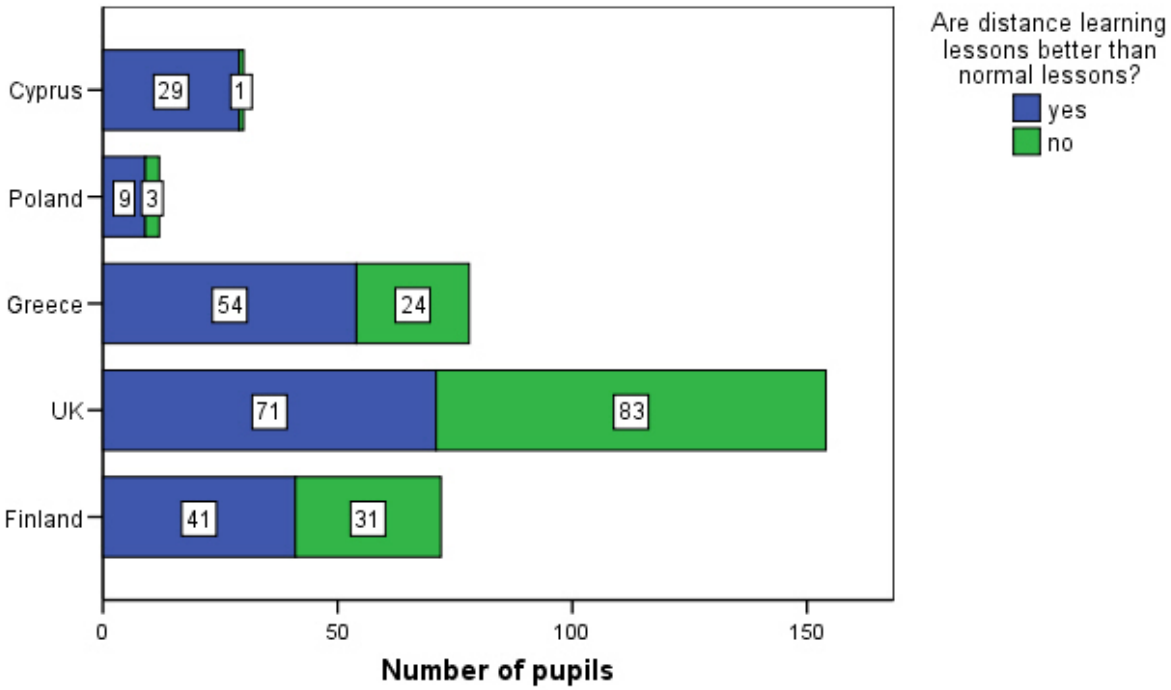
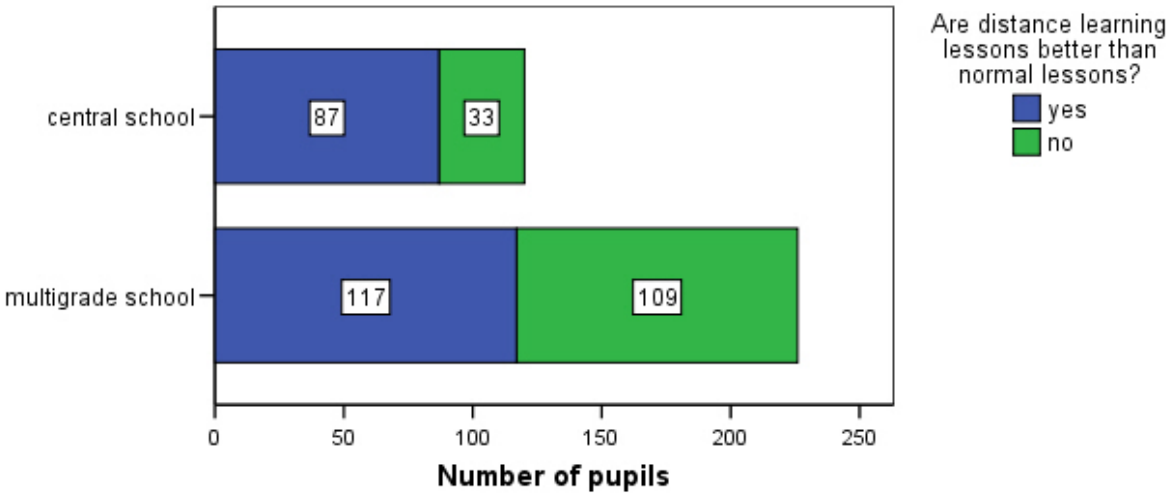


Chart 23. Willingness to have distance learning lessons instead of normal lessons according to pupils by school's position



Pupils in Cyprus, Poland and Greece were most willing (more than 80 %) to have more distance learning lessons in the future. In Finland 60 % and in the UK half of the pupils wanted to take part in distance learning lessons in the future. Through out the whole project the majority (63 %) voted for more distance learning lessons.

It is difficult to judge pupil's motives when answering this kind of question. Unmotivated pupils might find distance learning more comfortable than normal teaching because the teacher is more occupied with technology, especially in central schools, and that gives pupils more freedom to occupy themselves with other activities than they would normally have during teacher instructed learning. On the other hand, some of the pupils might find distance learning more suitable for their learning style. Distance learning lessons are slower and give more time for pupils to absorb given information. Videoconferences lessons might also give more concentrated and focused ideas of pronouncing when teaching a foreign language. For example, if the picture is big enough and well visible, the quality of sound is good and if there is a native language teacher at the other end, pupils might find a new mode of concentration.

Chart 24. Willingness to have more distance learning lessons in the future according to pupils by country

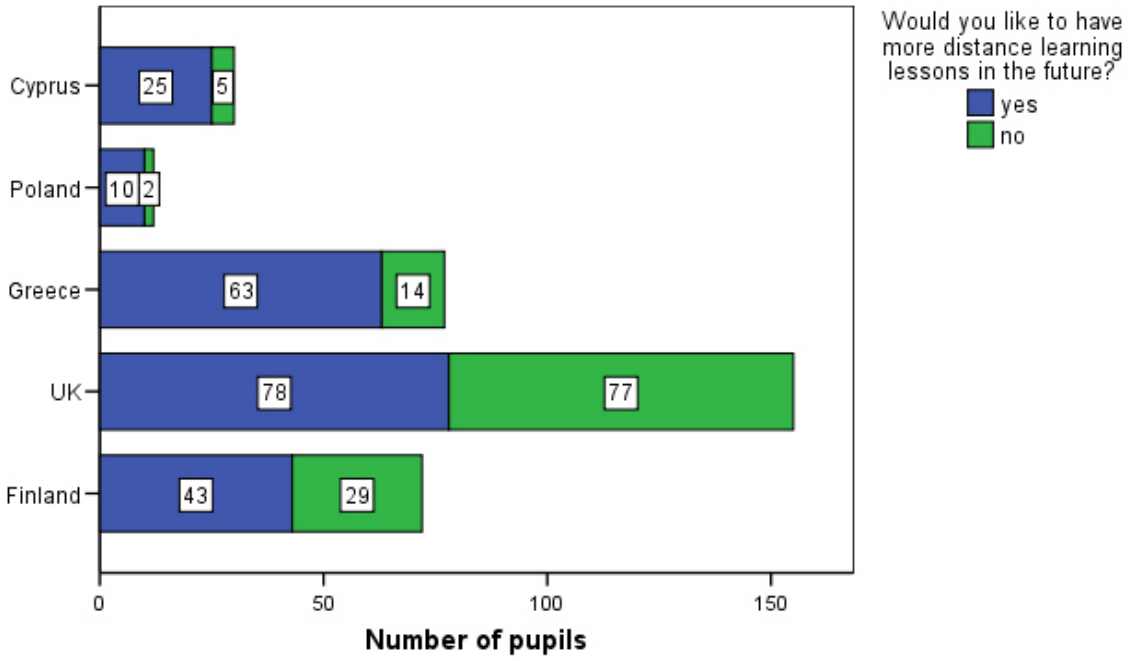
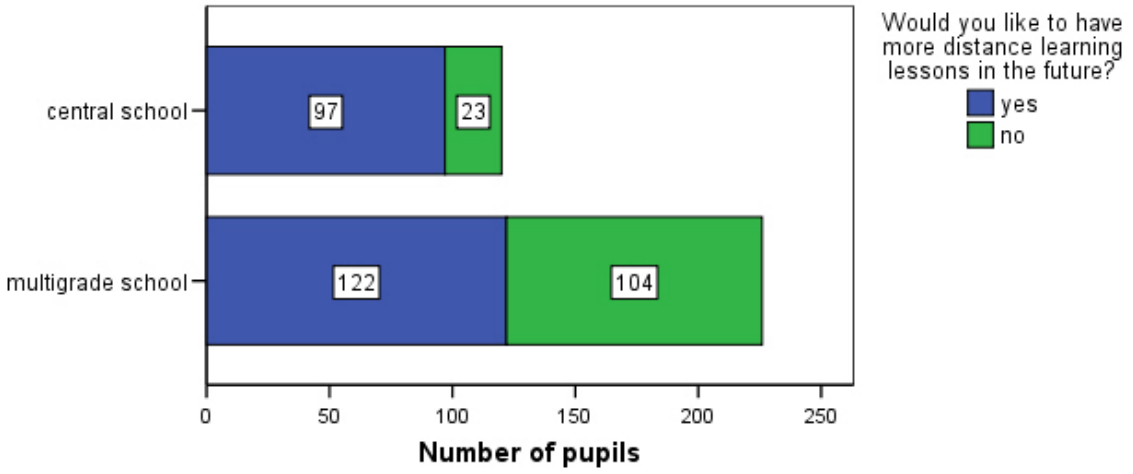


Chart 25. Willingness to have more distance learning lessons in the future according pupils by schools position



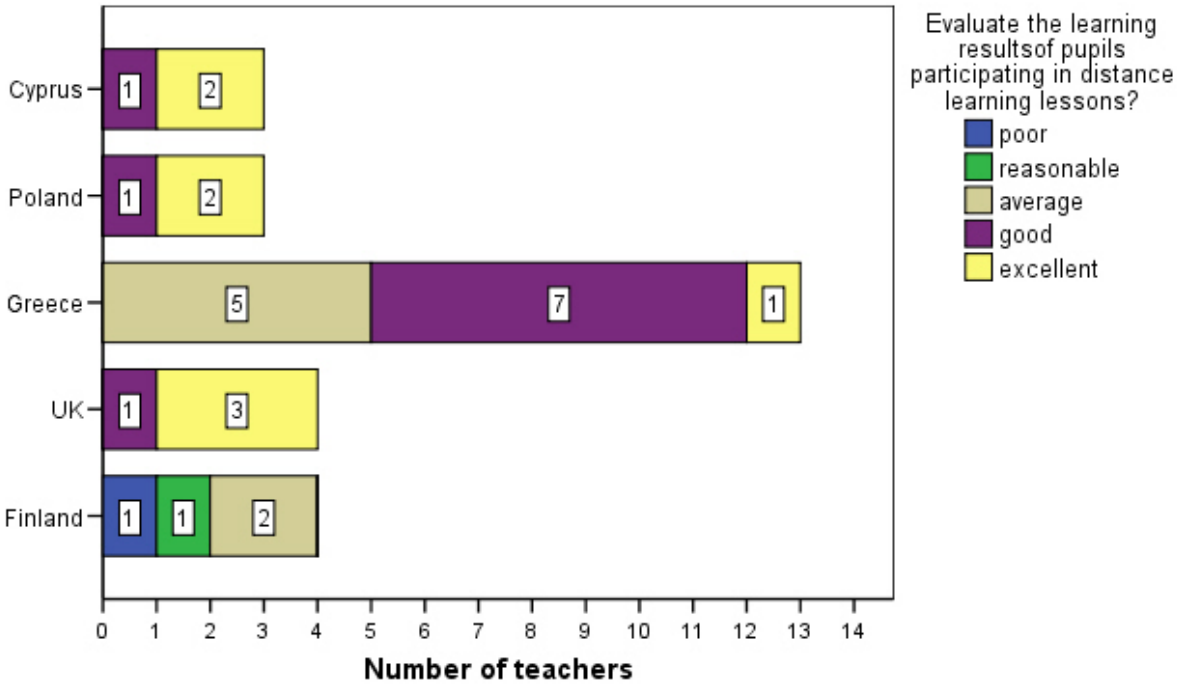
7.5. Distance learning in the light of the learning results

Learning results are hard to measure exactly and there are many theories of learning available. In the MustLearnIT project teachers were, for the most part, carrying on with normal schoolwork: revisions, quizzes, tests and interviews of pupils. Some teachers mentioned that they have used mostly their own intuition:

> *Tests and quizzes have not been given. I can only derive results on the basis of student's participation, involvement, enthusiasms and occasional revision (TGre009)*

Information from tests combined with professional intuition, teachers had the opportunity to evaluate pupils' learning results during the distance learning lessons. Learning results were seen by Finnish teachers in the most critical light. None of the Finnish teachers stated learning results to be good or excellent. One teacher thought they were poor, one teacher that they were reasonable and two teachers considered them to be average. In the UK, learning results were estimated to be good by one teacher and excellent by two teachers. Five Greek teachers thought that the learning results were average, seven teachers that they were good and one teacher saw them as excellent. In Poland one teacher stated that the learning results were good and two teachers thought they were excellent. Cyprus had the same results as Poland.

Chart 26. Learning results of pupils participating in distance learning lessons according to teachers by country



In the Greek focus group conversation, the lack of teachers' time and attention was recognised as a problem where the teacher had to divide their attention between the central and multigrade class room(s):

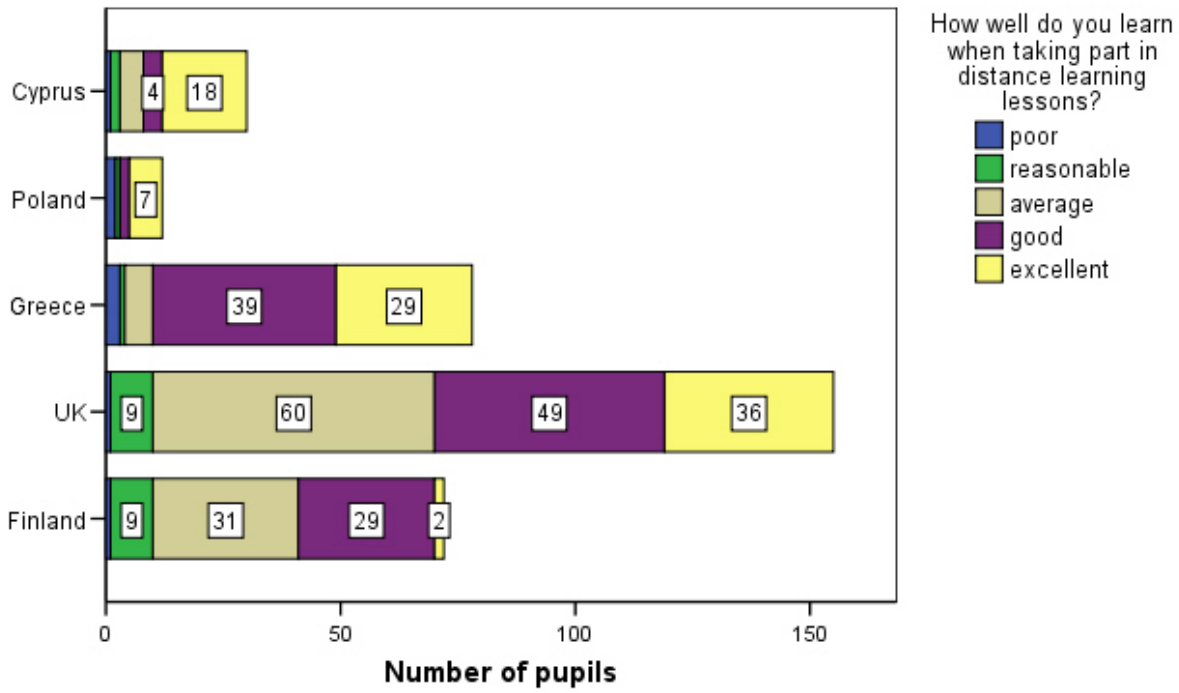
> *Most participants agreed that teaching young learners necessitates having a teacher who would be present in the class or, if not, virtually present and watchful of the distance class all the time. This was reported to have been a difficulty, as our teachers had their face-to-face classes to teach at the same time with the distance one. The problem was that the face-to-face class had to be told to do other things (most of the*

times) so that the teacher's hands would be "free" to work with the distance class (FCGre).

Pupils were asked to give their opinion regarding how well they learnt when participating in distance learning lessons. In Finland 14% of pupils felt that their learning was poor or reasonable when taking part in distance learning lesson, 43 % estimated their learning to be average and 43 % considered their learning to be good or excellent. In the UK 7 % of pupils felt that their learning was poor or reasonable when taking part in distance learning lesson, 39 % estimated their learning to be average and 56 % to be good or excellent. In Greece 5 % of pupils felt that their learning was poor or reasonable when taking part in distance learning lesson, 8 % estimated their learning to be average and 87 % considered their learning to be good or excellent. In Poland 25 % of pupils felt that their learning was poor or reasonable when taking part in distance learning lesson, none estimated their learning to be average and 75 % thought it was good or excellent. In Cyprus 10% of pupils felt that their learning was poor or reasonable when taking part in distance learning lessons, 17 % estimated their learning to be average and 73 % to be good or excellent.

Through out the whole project 9% of pupils felt that their learning was poor or reasonable when taking part in distance learning lesson, 29 % estimated their learning to be average and 62 % thought it was good or excellent. More than half of the pupils in the MustLearnIT project found distance lessons an effective way of learning according to self evaluation.

Chart 27. Self evaluation of the learning results of pupils participating in distance learning lessons by country



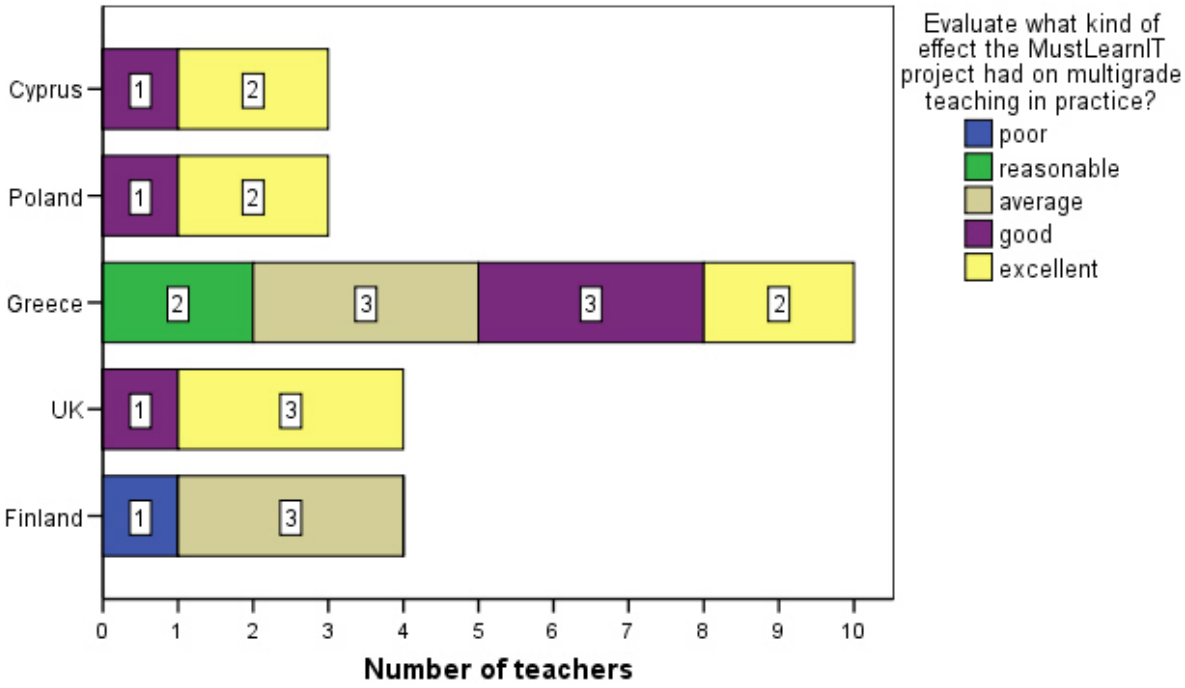
8. Learning a foreign language with the MustLearnIT model

The MustLearnIT project aimed to improve multigrade teaching by using modern ICT as a tool for special subject teaching which has been English, except in the UK where French and Spanish were taught. Multigrade teaching is a common way to work in small rural schools. In multigrade teaching the idea is that one teacher is responsible for teaching several grade levels at the same time, normally in the same class room. By differentiating tasks in the class room, it is possible to teach to different levels at the same time, adapting teaching to the age of the pupils. The role of ICT can be helpful when sharing the tasks for different grade pupils. In the teachers' questionnaire it was asked how the project has affected multigrade teaching and what the effect on language learning was.

8.1. Multigrade teaching

There were some differences by countries when asked what effect the MustLearnIT project had on multigrade teaching in practice. In Finland one of the teachers thought that the effect was poor and three teachers evaluated it as average. None of the Finnish teachers saw it as good or excellent. In the UK one teacher considered the effect to be good and three teachers thought it was excellent. Two of Greek teachers saw the effect on multigrade teaching as reasonable, three teachers as average, three as good and two teachers saw it as excellent. One teacher in Poland evaluated the effect on multigrade teaching to be good and two teachers thought it was excellent and the numbers were the same in Cyprus. Through out the whole project one teacher saw the effect on multigrade teaching as poor, two teachers as reasonable, six teachers as average, six teachers as good and nine teachers as excellent. It can be said that the project experiences related to multigrade teaching have been predominantly positive. In Finland and Greece teachers were more critical than in other countries.

Chart 28. The MustLearnIT project effect on multigrade teaching according teachers by country



A Greek teacher commented that the MustLearnIT model was good from the view point of multigrade teaching:

> *Multigrade school students definitely benefited from this project acquiring a basic knowledge of English (TGre008).*

In the Finnish focus group teachers deliberated the idea of multigrade teaching. Teachers' opinions were divided depending on whether they were teaching in a multigrade school or in the central school. Central school teachers were more critical about the MustLearnIT model than multigrade teachers:

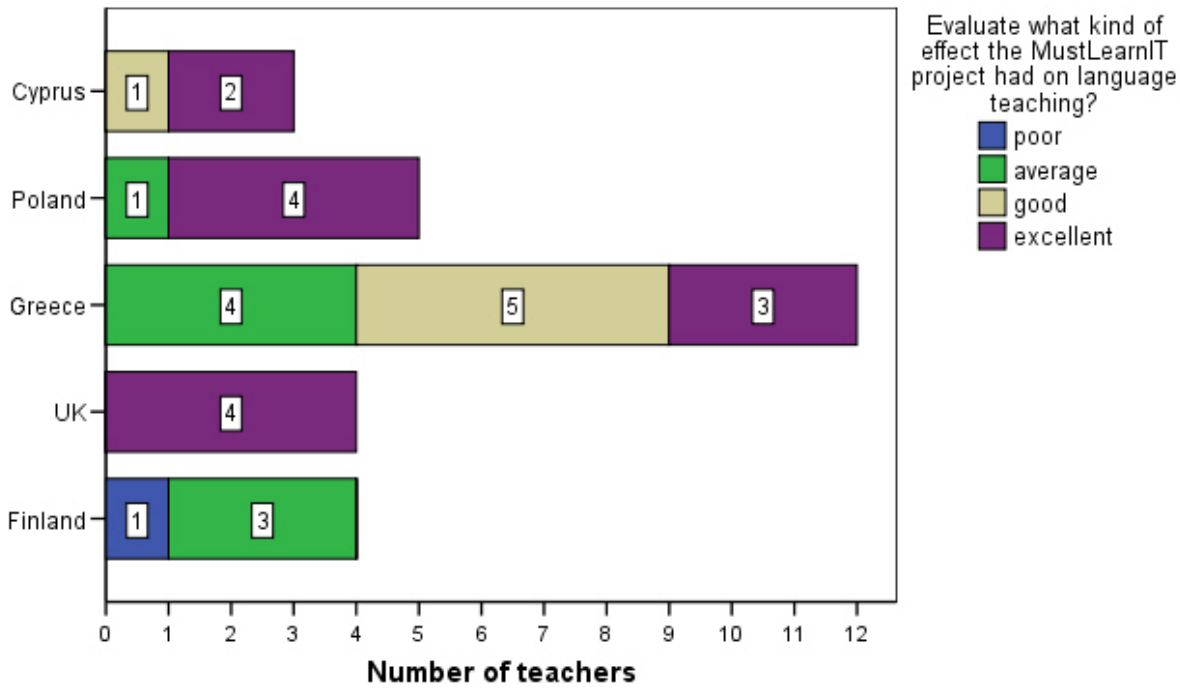
> *According to the conversation, it looks like the teacher in the central school doesn't find her role sensible but teachers in the multigrade schools are feeling more comfortable. The tempo in distance learning is slower than in normal teaching. ICT is ruling too much good learning. In language teaching it is important that everybody gets to speak, moving the microphone is too much hassle. If language teaching is getting too formal ruled by procedures with equipments, it is not good both for pupils and teachers (FCFin).*

8.2. Language teaching and learning

Participant teachers were also asked what kind of affect the MustLearnIT project had on language teaching. In Finland one teacher thought it to be poor and three claimed it was average. In the UK all four teachers saw the effect on language teaching as excellent. Four

teachers in Greece thought it was average, five saw it as good and three teachers estimated it to be excellent. In Poland one teacher answered that the effect was average and the rest of the four teachers answered that it was excellent. In Cyprus one teacher said it was good and two that it was excellent. Through out the whole project one teacher considered the effect to be poor, eight teachers average, six teachers good and 13 teachers saw it as excellent. According to teachers, foreign language teaching had definitely benefited from the MustLearnIT model because most of the teachers (19) evaluated its effect to be good or excellent.

Chart 29. The MustLearnIT project effect on language teaching according to teachers by country



The focus group conversation in Finland brought out that in language teaching smooth interaction is essential for meaningful learning:

> *When the microphone is shut down on the other end, it feels a bit funny situation, especially when thinking challenges of language teaching. Interaction might be the biggest problem in this model, according to central school teachers. For example it is not easy at all to recognize pupils' special needs in distance schools when you are looking at the pupils through camera's lens (FCFin).*

Some Greek teachers had similar problems as the Finnish teachers: How to be present for pupils all the time during the distance learning lessons:

> *The need for a teacher who would be present 100% of the time was agreed to have been even more important for the teaching of foreign languages by distance (and in this way, using these platforms), as technical issues created enormous problems. Internet connection was reported to have been one of the greatest problems and*

> *obstacles frequently posed that had to be overcome in "real" time, as the lesson unfolded (FCGre).*

In the UK focus group experiences have been mostly positive:

> *One of the main benefits for remote teachers, who have little linguistic knowledge, has been in having teachers' expertise and confidence and a correct model for pronunciation. The video-conferenced lessons have provided a springboard for remote teachers to have in-put on a weekly basis to provide the classroom teachers with the potential for drip-feed in language and developmental work following the lessons.*

However, functionality of the model depends on the skills of the foreign language teacher:

> *There is still a concern that this depends on the remote teacher's level of language ability and their confidence. A further advantage of the video-conferenced lessons has been the fact that pupils see their teachers joining in with the learning and learning alongside them (FCUni).*

8.3. Pupils drawings

Pupils made some drawings which are some way reflecting their ideas and emotions while being involved with the MustLearnIT project. Drawings were made in Greece, Cyprus and Poland. All together there are 120 drawings available and something can be said about them. Drawings have been classified according to the content so that there can be found 1) equipment, 2) humans and equipment and 3) humans having vivid interaction with equipment. Identification of these *ad hoc* classes is not clear in all of the cases. When the case is not clear, I have used the general impression of the picture to decide which class is the most suitable. Only equipment were found in 30 % of the pictures, mostly humans were found in 29 % of pictures and clearly observed interactivity between equipment and humans was found from 41 % of pictures. According to these numbers it looks as though most of the pupils haven't stepped to the stage where computer-human interaction is the natural thing in the school environment. Anyway, drawings can be interpreted in many ways, and in this particular case the MustLearnIT project has definitely had a positive effect because nearly half of the pictures clearly presented interaction with equipment.

Figure 4. A girl from Greek central school drew a picture where the screen is clearly in sight with the standing names of the participating multigrade schools. In this drawing, humans are portrayed with equipment in a natural way.

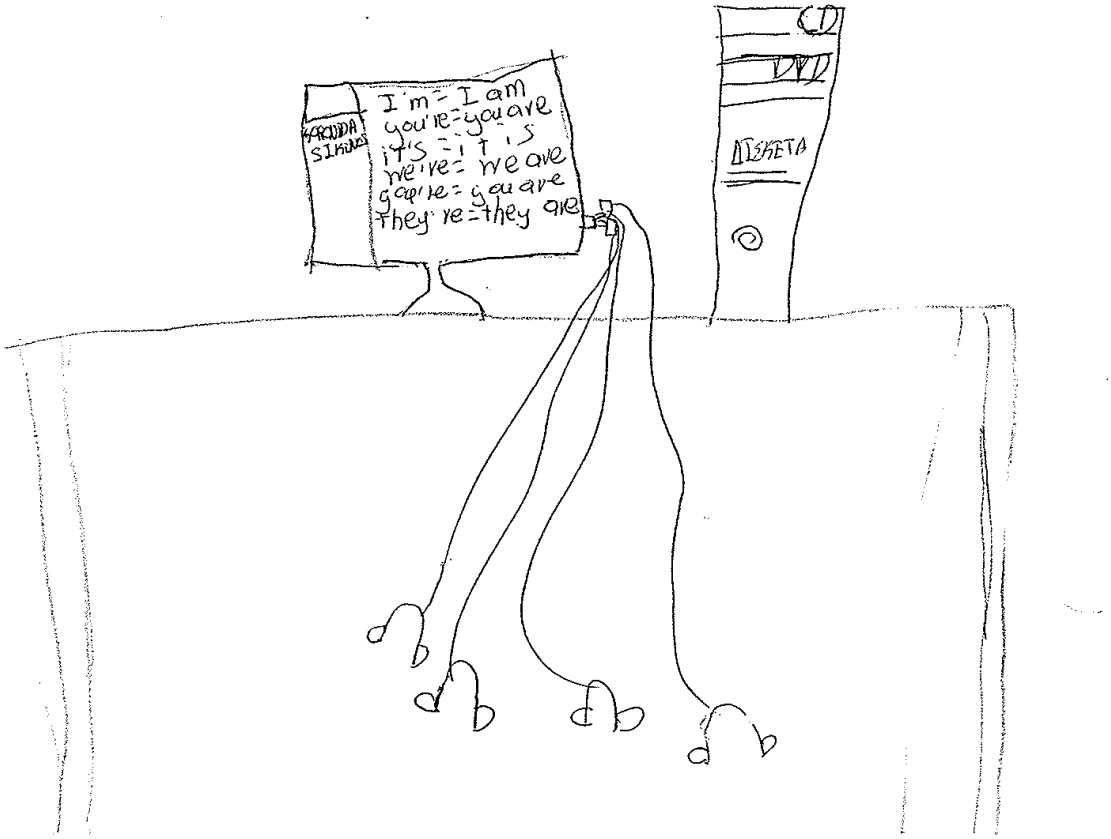


Figure 5. No humans are visible in this Greek pupil's drawing. Instead, headsets are swinging around filled with the flow of English language. The computer screen is announcing that something has been learned while on the distance learning lesson.

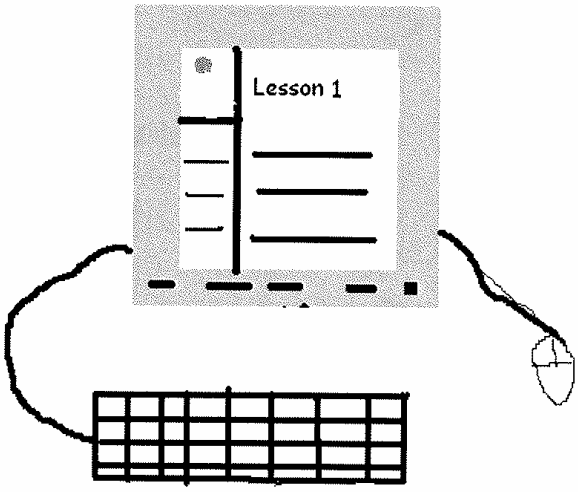


Figure 6. Polish pupils were using computers for their drawings and it made expression a bit angular. A boy drawer tells us that the computer is giving lesson number one.

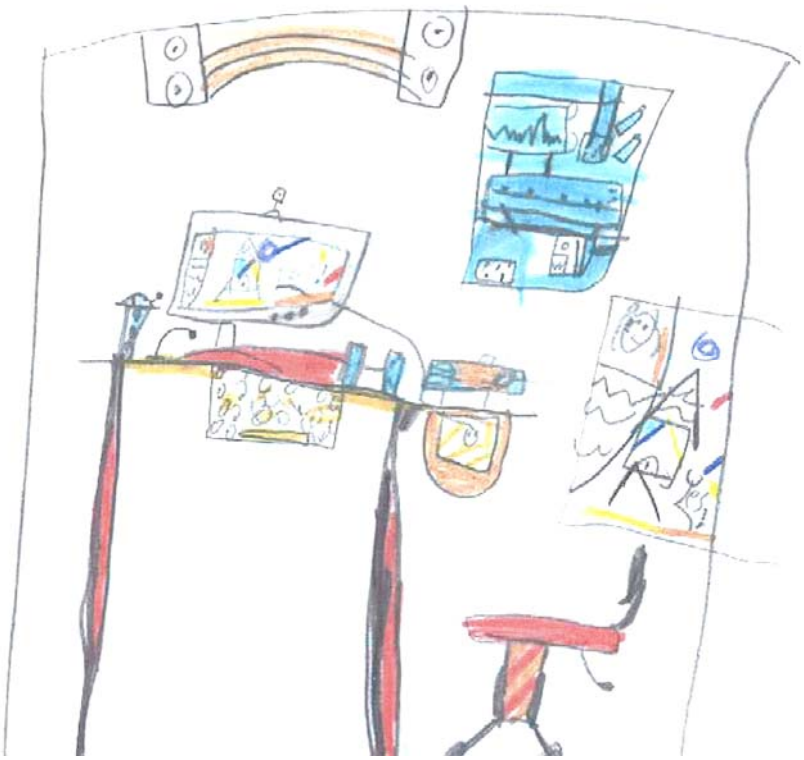


Figure 7. A colourful picture from Greek central school boy. Equipment is presented nicely as a source of activity and creativity.

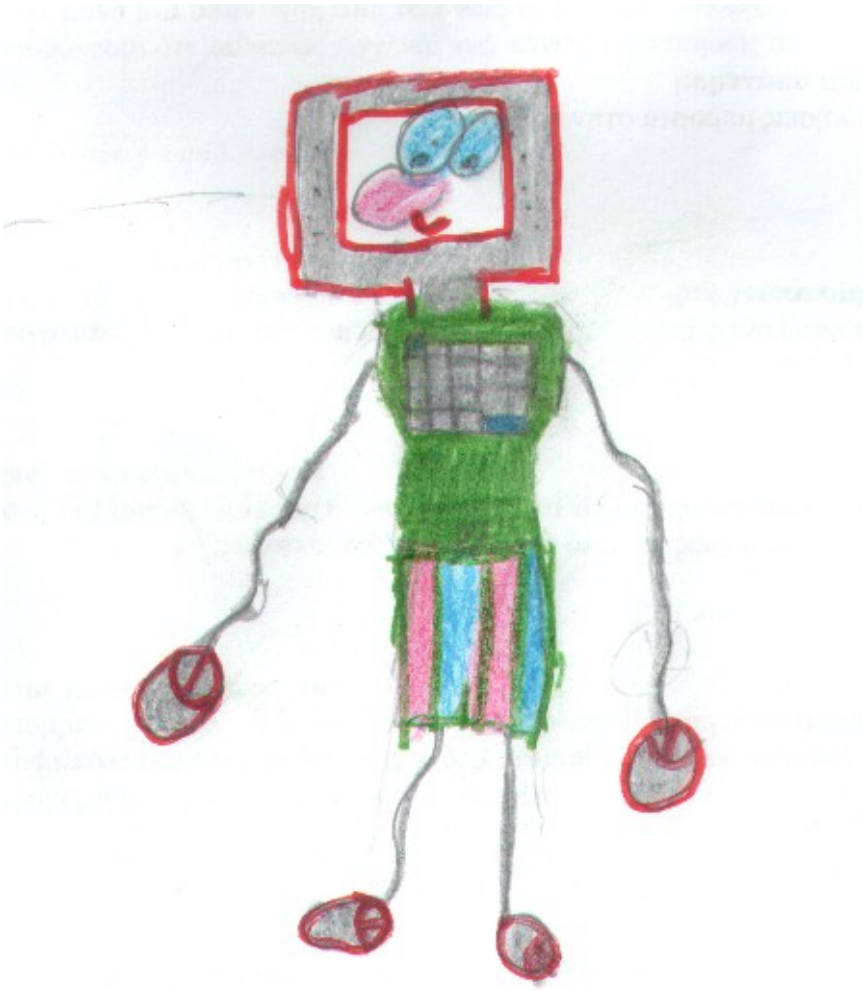
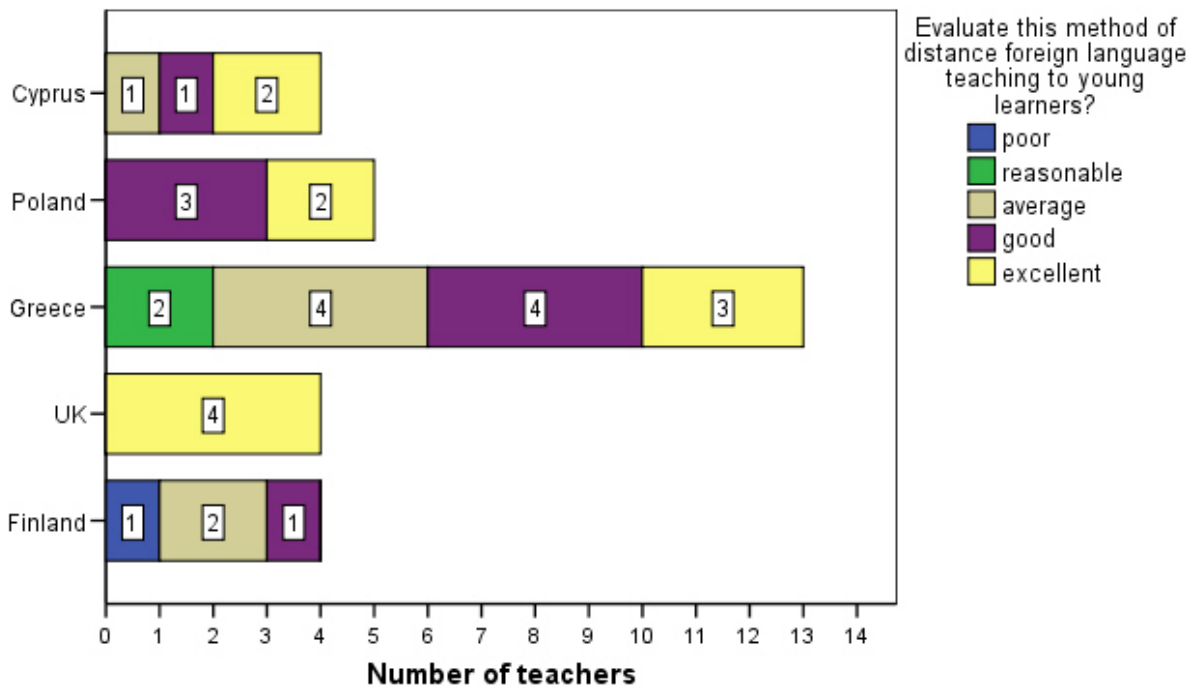


Figure 8. Is this Cypriot illustration a criticism of computers? When pupils are seeing themselves as a hybrid of human being and computer it can be interpreted in two ways: Technical equipments used in the project are either forming a seamless user interface with humans which can be a positive thing, or pupils might find themselves enslaved by equipments, as seen in the illustration, when the head is framed by the computer screen and palms are replaced with mice.

8.4. Overall usability of the MustLearnIT model

In the final question in the teachers' questionnaire it was asked to evaluate the used distance learning method generally. It was also possible to give some free comments about it. In Finland one teacher saw the method as poor; two teachers evaluated it as average and one teacher as good. In the UK all four teachers gave the best grade, excellent. Two of the Greek teachers thought that the method was reasonable, four teachers saw it as average, four teachers saw it as good and three teachers saw it as excellent. Three Polish teachers evaluated the used method as good and two as excellent. In Cyprus one teacher saw the method as average, one as good and two of the teachers thought it was excellent. Through out the whole project 20 teachers out of 30 evaluated the distance learning method as good or excellent. The most critical voices were among Finnish and Greek teachers.

Chart 30. The usability of the MustLearnIT method according to teachers by country



According to the Cyprian view, the project has been a challenge. Yet distance learning lessons have made learning procedure easier:

> *The MustLearnIT project was a challenge for teachers and pupils. Not only was it a great experience but it was effective as far as language teaching is concerned. The lessons were well prepared to meet the needs of pupils of all schools and were always in accordance with the curriculum goals and objectives. Lesson were interesting and fun, thus making learning procedure easier (TCyp001)*

In the UK videoconferencing is recognised as successful and suitable for young learners:

> *The video-conferencing has facilitated excellent provision for the primary learners. It has built capacity and confidence in the non-specialists. Pupils are motivated and are making excellent progress. (TUni004)*

A teacher in Greece saw the method efficient, excluding technical problems:

> *This method is very useful and efficient as it gives multigrade school students the opportunity to acquire a basic knowledge of English which otherwise would not have been possible. However, the method should be improved as far as the technical part is concerned. Better internet connection and technical equipment are essential. (TGre008)*

9. Evaluating the project process

The core idea of the MustLearnIT project has been based on the developmental potential of ICT and its educational aspects. Technology is advancing fast and new possibilities to use it for different purposes are emerging daily. Social innovations of using ICT are partly unpredictable and they might change already adapted practices in a short period of time. From the project planning view point it does mean that some factors of uncertainty have to be accepted or more likely when seen positively, unpredictability can become one of the strengths of development work, and even in some cases it might lead to totally new inventions.

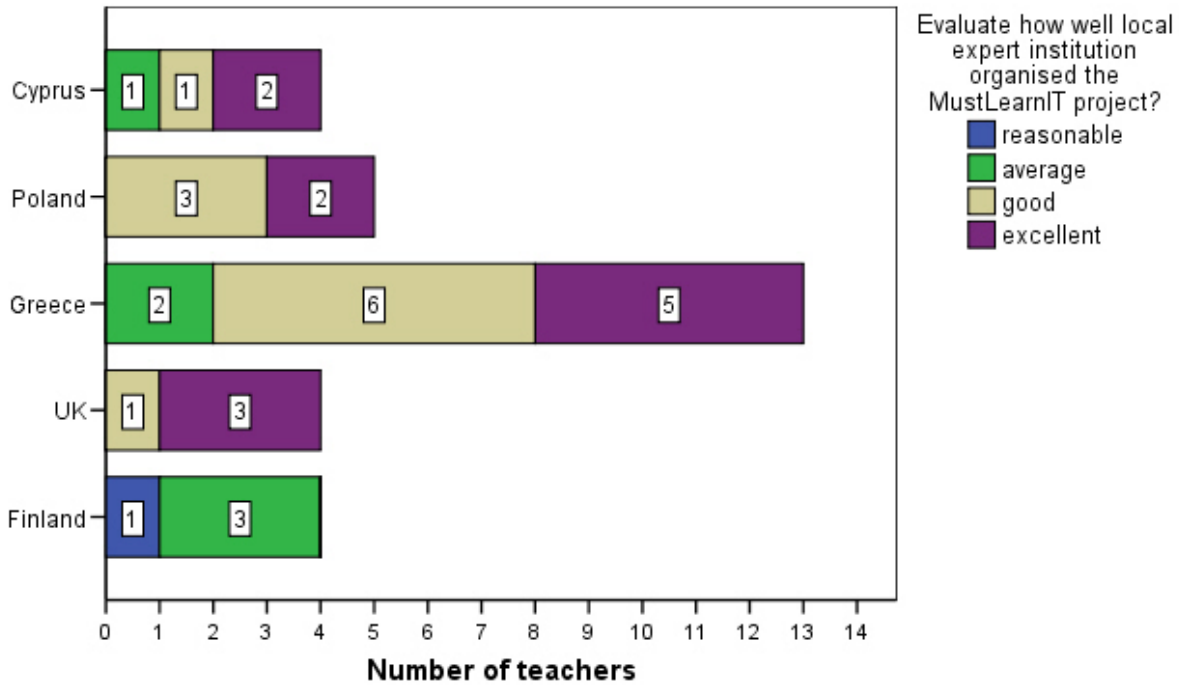
I have evaluated the MustLearnIT project as a process and as functions at three separate levels: Firstly, assessment of organising skills and support given by the local institutions (see chapter 9.1 and 9.2), secondly, description and evaluation of the project stages (see chapter 9.3) and thirdly, evaluating the pedagogical usability of the MustLearnIT distance learning model (see chapters 6-8). Lastly mentioned together with the conclusions and discussion are some ideas which the tacit project knowledge generated within development work have brought out.

9.1. Organising skills of the local expert institutions

In the teacher's questionnaire there were two questions to measure the role of local expert institutions and their ability to organise the project and give support to schools at a national level. In Finland one teacher saw the organisation skills as reasonable and the remaining three teachers considered them to be average. One teacher in the UK considered the organisational skills to be good and the remaining three teachers thought them excellent. In Greece two teachers thought that the organisational skills of the local expert institution were average, six teachers thought they were good and five teachers that they were excellent. In Poland three teachers thought that the organisational skills were good and two teachers that they were excellent. In Cyprus one teacher evaluated the organisational skills as average, one teacher

good and two thought them to be excellent. Through out the whole project local expert institutions received positive feedback about their work because 23 teachers evaluated their work as good or excellent. Finnish teachers were the most critical about their local expert institutions organising skills.

Chart 31. Expert institutions organising skills according to teachers by country



In Poland teachers were very pleased with the organisational skills of the local institution:

> *The National in-service teacher training centre has organised this project at a very high level. There were organized trainings, which gave me the possibility to get know about the project itself and the equipment (platform). Organisers were always ready to help in different cases: technical professionals came to our school and installed Centra in our computers (TPol003)*
>
> *The support was appropriate to our needs (TPol005)*

Cypriot teachers also received enough help from their local institution:

> *The local institution provided help at all times and experts were present at schools during distance lessons. (TCyp001)*

Also in Greece comments were mainly positive:

> *They offered their expertise and enthusiasm and did their best so that all schools could receive everything necessary to that end (TGre009)*

Constant communication with the institution for the solution of any kind of problems (TGre004)

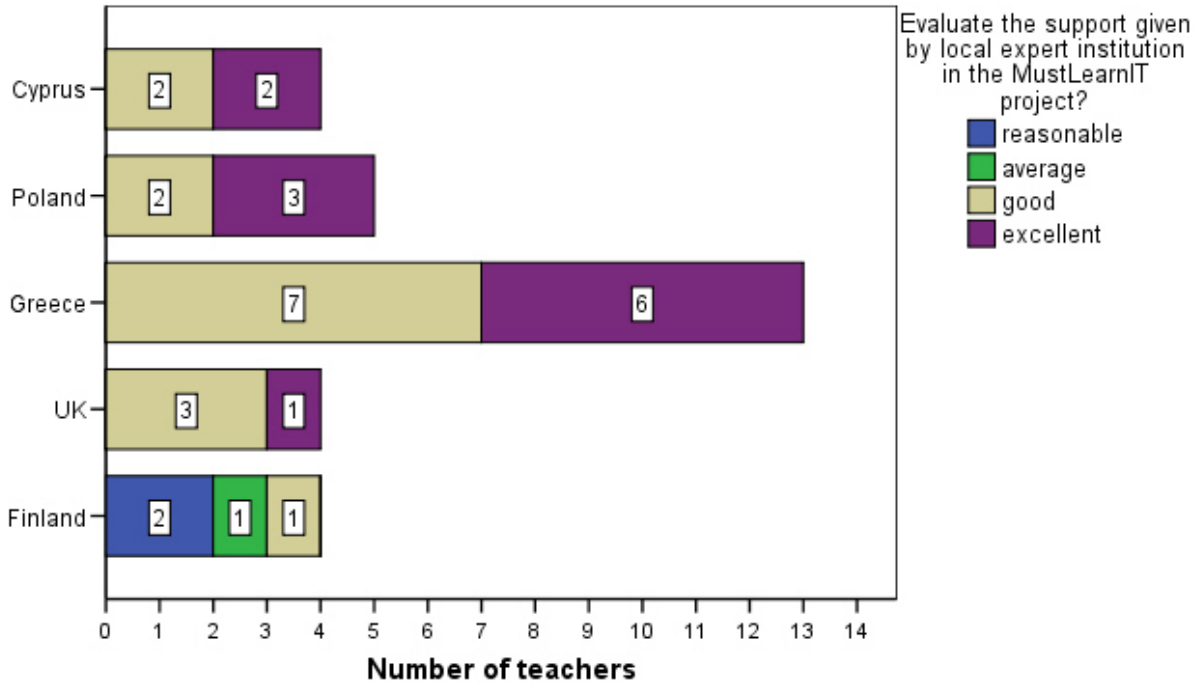
However there were still a few discordant notes among the comments. Equipment was eagerly waited for in schools in Greece:

Equipment sent late (TGre010)

9.2. Support given by the local expert institutions

Teachers were also asked about the support given by local expert institutions. With this question it has been possible to track more accurately those actual things done or not done for the schools by local experts. Two Finnish teachers evaluated the support given as reasonable, by one teacher average and one teacher considered it to be good. In the UK three teachers evaluated the support as good and one teacher as excellent. Also Greek teachers were pleased with the support: seven teachers saw it as good and six thought it had been excellent. Two Polish teachers evaluated the support as good and three as excellent. In Cyprus two teachers evaluated the support given by local experts as good and two teachers as excellent. Through out the whole project the questionnaire results indicate that teachers have been satisfied with the level of support. 27 teachers out of 30 thought that the support level has been good or excellent. Finnish teachers were again a bit more critical than teachers from other countries.

Chart 32. The level of support given by expert institutions according to teachers by country



In Greece some books were sent to the schools and it was noticed in many teachers' comments:

> *They were quite willing to help. One good example of this is offering to buy books for the multigrade schools (TGre009)*
>
> *Telephone support and collaboration via email, provision of books (TGre006)*
>
> *Correspondence (books, headsets free) telephone support (TGre007)*

There were also a couple of comments in Greece that support took too long. The large number of participating schools in Greece might have affected this:

> *However more expert staff should be available since expert help took quite long time (TGre008)*

Some more lessons and equipment were welcome according to a Polish opinion:

> *Of course additional lessons of English, equipment: camera, speakers and headphones, UPS, fixed internet connection (TPol003)*

9.3. Evaluating the project stages

The general purpose of the ongoing evaluation was to examine the process of the project and its implementation. The basic idea was to produce systematic information that would strengthen the project. All project work was monitored systematically and feedback was offered mainly during project meetings. This is an overview of the project progress presented in project stages.

Stage 1. Project Kick-off, (1.10.2005 – 5.11.2005). At the start of the project it was obvious that all the partners were excited and willing to do their best. All the partners were experienced and were ready to work for the project. During the first project meeting in Greece, Patras, a common understanding concerning the main goals of the MustLearnIT project was achieved. Even if there was a clear idea, a kind of big picture of the distance learning model to be used, detailed plans and circumstances in the participating countries were still at the planning stage. It would have been better if all the partners had at that point a more clear specification of their ideas about how to proceed. Another solution could have been that all the countries would have started to use the exact same model as dictated by the coordinator. It is good to remember that resources, skills and cultural differences made the project implementation challenging.

Stage 2. Detailed design of MustLearnIT model (1.10.2005 – 30.6.2006). The coordinator had a clear vision about MustLearnIT model from a very early stage. Finland, UK, Poland and Cyprus were using more time to finalize and specify their own model design. There is a good and detailed description of the project available entitled: "MustLearnIT: Detailed design of an ICT supported, distance learning model for primary school pupils of multigrade schools". The

document shows the status of design of the distance learning model and selected approaches in different countries in spring 2006. Although, some minor changes were made by partners after the release the project design report. For future reference, these kind of key papers should be made at a very early stage of the projects, one or two months after the kick off. The project design report was finished on time as promised in the work plan section in the full project proposal (FP 2005: 44).

Stage 3. Setup of the e-learning platform to be used (1.1.2006 – 30.9.2007). E-learning platform combines three different portions: 1) MustLearnIT portal has been used as collaboration environment for the project members, the dissemination means for project output, 2) the access point for the distance learning software Centra and 3) the access point for the online material software Moodle. A project portal provides communication among project participants and it has been used as a depot for all the material developed in the project. The portal is still available on the coordinator's server as long as needed (October 2007). However, the portal hasn't been as popular among the participating teachers as it was hoped. The biggest reason preventing vivid online discussion has been the language barrier between teachers from different countries. Motivation is another reason: When people haven't actually met each other face to face, threshold to share opinions and experiences is reasonable high.

Stage 4. Development and adaptation of educational activities and material (1.1.2006 – 30.6.2007). The special subject to be taught was foreign language, English for Greece, Finland, Cyprus and Poland, Spanish and French for the UK. In the Progress report it was mentioned that Poland would also try Science but that was reconsidered and with mutual understanding with the coordinator it was decided to focus on foreign language lessons due to the increased workload and different teaching methods Science lessons would require. Partners have made a handbook together including a collection of ICT based educational activities and other material as promised in the full project proposal.

Stage 5. Implementation in schools (1.1.2006 – 30.6.2007). All the project partners managed to give teacher training related to the MustLearnIT model. There are some differences in implementation of the project model. If looking, for example, at the amount of distance learning lessons in different countries, it can be said that the scope of the implementation has been quite variable from country to country. Ten (Poland) or less (eight in Cyprus) distance learning lessons gives a very different idea of distance learning if compared to for example the UK's 100 and Greece's 81 videoconferencing lessons. In Finland 20 distance learning lessons were accomplished. All the partners also had some technical problems with the implementation of the model. At this stage of the project the sharing of the experiences mainly happened in Poland, Sulejówek during the three day meeting there, and it can be said that more continuous communication and online sharing would have helped all the partners improve their model design.

The MustLearnIT project had very ambitious goals. Challenges of building an educationally appropriate distance learning model for young learners was demanding. What has been done is more than a good start but certainly, the building of a fully working and thoroughly tested distance learning model, according to my judgement, can not be made during the two years project time, especially when partners are expected to build more or less similar activities. Somehow it can be said that a selected approach to design culturally and locally adapted models was natural and the right direction to take with in this project.

Maybe defining the project implementation more specifically or giving different roles for project partners at a very early stage of the project might have helped to form even more focused results. The strength of the project has been that partners were enthusiastic and willing to do their best in the given circumstances. The project has also generated lots of useful research data which can be utilized when planning continuation projects, which I would recommend to do.

Stage 6. Evaluation (1.1.2006 – 30.9.2007). There were some difficulties to find appropriate evaluation tools for five different scales of implementation and for five different approaches to distance learning models. I have found it pretty difficult to measure project outcomes themselves as separate from the whole implementation and that is why this final evaluation is primarily research based where success and drawbacks should be visible from the research data and its interpretations. I also believe that results presented in this way will serve more forthcoming projects and a wider audience who might be interested in the pedagogical aspects of the ICT based teaching of young learners. The pre-release version of this report was available at Syros MustLearnIT conference (21.9.2007) for the partners to comment.

Stage 7. Dissemination (1.11.2005 – 31.9.2007). Dissemination of the MustLearnIT project material has proceeded as planned. The dissemination activities plan presents five target groups who should be informed about the project aspects. 1) School teachers of the project, 2) students of the project, 3) public, in particularly concerned parents of pupils participating in the project, 4) education policy makers and 5) university and research institutes.

There is a handbook of ICT based educational activities used and developed by partners for teachers use in participating schools. For wider public information, a multipurpose leaflet in English was made and it presents the main goals and activities of the project and it is designed to serve as a poster as well. The MustLearnIT project has been introduced in several conferences by the coordinator and by other project partners, for example in the national Polish conference: “The role of e-learning in assurance of equal educational opportunities” 25th May 2007. According to my estimate, dissemination activities have been more than sufficient. For example, using the search word “MustLearnIT” with the internet search engine Google, it gives more than 700 hits. Additionally, at the conference in Syros there were some plans to publish one or two referee articles in some appropriate scientific journal what would be very preferable.

Stage 8. Actions regarding continuity and sustainability issues – Close of the project (1.1.2006 – 30.9.2007). There have been some connections and links to other similar projects, for example the NEMED project. All the partners had discussions with local authorities in their countries at the project planning stage. The real challenge will be how to mediate experiences and results of the MustLearnIT project to educational authorities and to researchers in the field now when they are freshly available and still topical.

Stage 9. Additional coordinating activities (1.10.2005 – 30.9.2007). Greece as a coordinator (CTI) was responsible for the general schedule, information and leading the MustLearnIT project. All the four project meetings in Greece (Patras), Poland (Sulejówek), Finland (Kokkola) and the closing conference in Greece (Syros), plus two video conferenced meetings were well arranged with accurate themes and sub themes. Meetings' agendas came to partners in good time and the agendas were built together with all the partners. This still didn't change the fact that for good cooperation more meetings are definitely needed. The general impression was that the actions of the project coordinator were effective and professional. There were no complaints among the partners concerning the work of the project coordinator.

10. Conclusions and discussion

At the very beginning of the project it was obvious that all the participants were going to have slightly different implementation models. The project model itself allowed variations in implementation across the partner countries which meant that the evaluation method needed to be adjusted slightly in different countries. When reaching a mutual understanding about the idea that different variations of distance learning models can be used in different countries, one justification for proceeding with this kind of implementation was the idea of collection of data from the different approaches of distance learning. The basic idea of the MustLearnIT project itself was clear: To design and development of an integrated distance learning model for learning, to aid multigrade primary schools by sharing resources such as teaching staff (local and remote) and by taking the utmost advantage of existing technical infrastructure. The ground for sharing resources between central and multigrade schools were based on; 1) online learning material and, 2) distance learning lessons.

Different implementation philosophies by country have also meant different scales of implementation. In the UK 156, in Greece 78, in Finland 72, in Cyprus 30 and in Poland 12 pupils were involved in the MustLearnIT project. In the UK, Greece and Finland the amount of pupils was enough to get first-hand user level experiences and a good sample of research data as well. That was not the case with Cyprus and Poland where implementation was more of a pilot study nature, although their results are good according to the teachers. During the project, the total amount of distance learning lessons arranged in all five countries was 219. It can be assumed that the time required to accomplish one distance learning lesson was at least triple the time and work power required to be used in schools. Through out the whole project this amount is fully sufficient to test distance learning models. In the UK, the average distance

learning lesson amount was 100, in Greece 81 distance learning lessons were accomplished, in Finland 20, in Poland 10 lessons and in Cyprus eight lessons.

The Moodle platform was used in Greece and Cyprus, Aurum was used in Poland and the Opit platform in Finland. In the UK project related online material wasn't used at all. Teachers were asked to evaluate pupils learning results while using the online material. Through out the whole project the learning results were seen as more positive than negative because 17 out of 24 teachers saw results as good or excellent. When asked, pupils' own opinions regarding learning while doing computer exercises were similar; there were no big differences between countries. Through out the whole project pupils evaluated their own learning as poor by 2 % of pupils, reasonable by 4 %, average by 25 %, good by 42 % and excellent by 27 % of pupils. The majority of pupils (69%) considered their learning to be good or excellent, so it can be said that they are enjoying doing computer exercises and think that they can learn that way.

Distance learning lessons were arranged according to three different solutions. The interactive Centra platform was used in Greece, Cyprus and Poland. In Finland, during the first and second round of implementation, high quality videoconferencing was used and during the third round of implementation the Connection Pro platform was used with less positive results. In the UK high quality videoconferencing was used through out the project. All the participants in the project, except in the UK, found the technical quality of the distance learning lessons to be problematic in some way. There have been major problems with the functionality of equipment and with the speed of connections. According to the comments in the evaluation data, teachers have found that in some cases, the technology has been a factor preventing good learning from taking place.

When pupils were asked: Are distance learning lessons better than normal lessons? Some differences can be found by country. In Cyprus 97 % of pupils thought they are better, in Poland 75 %, in Greece 69 %, in Finland 57 % and in the UK 46 %. A similar trend can be seen by country when pupils were asked if they would like to have more distance learning lessons in the future. This is one of the most interesting results. It can be interpreted that the more distance learning lessons become an everyday experience, the more critical attitudes are generated. First hand experiences of ICT based learning are enchanting and exciting but when ICT becomes a part of everyday school work, attitudes become more balanced.

Through out the whole project 63 % of pupils would like to have more distance learning lessons in the future. This accounts for just more than half of the pupils involved in the project and it can be concluded that distance learning is dividing opinions sharply. The reason for this can be the slower pace of teaching and lack of constant interaction with pupils and teachers. Some pupils enjoy this kind of learning and others feel frustrated with this kind of learning. For example, pupils with some learning difficulties might find slow going suitable for them. However, according to teachers, pupils' motivation level is high during the online lessons.

It was also noticed that in Finland and Greece there was a difference between multigrade and central schools: Central schools' pupils are more optimistic with their opinions than multigrade schools' pupils. This gap was clearly visible especially in Finland where 46 % of multigrade school pupils (in Greece 65 %) stated that distance learning lessons are better than normal lessons and in central school 67% (in Greece 71 %) of pupils had that opinion. Similar views were presented clearly in the Finnish focus group conversation where teachers' attitudes were divided according to the schools' position. With some caution, it can be said that multigrade teachers find distance learning lessons more motivating than central school teachers. On the other hand it looks as though, again with some caution, that multigrade pupils don't find distance learning lessons so motivating as central school pupils. Central school teachers are more occupied with technology than multigrade teachers and this creates a different kind of learning environment in central and multigrade schools. The gap between the attitudes also indicates that the used model of distance learning could not be implemented smoothly without the difficulties caused by technology. It means that teachers were not able to work to the best of their ability in a pedagogical sense. They also had limited time and resources to be shared between the multigrade and central schools.

The project's main goal has been the design, development and implementation of an integrated distance learning model for learning, to aid multigrade schools to improve their special subject teaching and learning. This goal as a basic level of implementation has been achieved through out all the MustLearnIT project partners. Also all the partners have been well motivated and active through out the MustLearnIT project. Participant countries can be characterised depending on how successful the local implementation has been in the light of the learning results. If asking the pupils' opinion, the self evaluated learning results of the distance learning lessons were best in Greece where 87 % of pupils think their learning was good or excellent. In Poland 75 % of pupil had that opinion, in Cyprus 73 %, in the UK 56 % and in Finland 43 % of pupils thought that their learning was good or excellent.

If we look more carefully at the whole picture of the evaluation data, it can be seen that in the UK teachers had less problems with technology than in other countries. Also teachers there were in almost complete agreement regarding the pedagogical quality of the distance learning lessons (see page 30), the interaction activity of pupils (see page 35), the quality of cooperation between the schools (see page 38), motivation level of pupils (see page 38, this was evaluated as excellent in Poland as well), learning results of pupils (see page 42, also excellent in Cyprus and Poland), the project effect on language teaching (see page 46) and the usability of the MustLearnIT method (see page 53). Polish, Cypriot and Greek teachers had good experiences in their implementation. The Finnish teachers were most critical about the success of their own implementation.

The UK model of distance learning does work well according to the evaluation data, and it should be considered as a good example for continuation projects of distance learning. Simplicity and pedagogical usability were the key elements. It can be concluded that in good

distance learning it is not a question of broadcasting or spreading teaching but, more likely, it is a question of interaction between pupils and teachers. This is somehow contradictional to the ideas of sharing resources and finding ways to cut costs within the education sector. When planning distance learning models for young learners, the functionality of the interaction between pupils and teachers should be considered well enough. An authentic and intensive interaction will generate better, more motivated learning. Projects should not try to reach the most advanced technology but rather the most suitable technology, such technology which is totally reliable and easy to use from the view point of the end users, teachers and pupils.

Finally I would like to stress again, that direct comparison of percentages and numbers between countries doesn't give an objective picture of successfulness of implementation in Greece, Finland, UK, Cyprus and Poland. Each of the project partners has carried out the project work in the way best applied to their own culture, standards and resources.

Closing words

In the third project meeting in Finland, we visited in Ullava at Vionoja's school. Visitors were watching the smoothly advancing English lesson in a multigrade school. After the lesson one of the Cypriot project people started to chat with Finnish pupils. She was struggling because the pupils remained silent but she didn't give up. She smiled and just kept going. Finally after asking about Lordi, the band the ice was broken, chat started and a connection was formed between visitor and pupils. They were having a Cypriot-Finnish chat in English, using the vocabulary they had in their heads at that particular moment.

At that point I was thinking it would be nice to have more moments like that in these international projects. Moments where genuine experiences of interaction are replacing a haughty project slang jumping off from the papers. For example, we all understand what interactivity means when translated directly word to word but we are not necessarily connecting the concept of interactivity in exactly the same ideas and behaviour. Small slight differences can be found depending on cultural context. These little cultural differences brought added value to the MustLearnIT project.

If adopting a nihilistic way of thinking, a post modern project reality can be seen as one kind of "collection of spectacles" where the accurate aims, real doing and putting things to go on, is too easily switched to planning, talking, dissemination and managing. When the projects themselves have become too much the focus of attention, the danger is that the well-meaning aims of the projects – which of course can be very well planned and have a benevolent nature – are not meeting the hard demands of the real world behind the plans.

In the shadows of the main goals of the MustLearnIT project, it is possible to see those small schools themselves with insufficient budgets, busy schedules, challenging pupils and the lack of professional work force. Did we work mainly for the schools or more for the project itself?

Did those participating schools got something valuable from the project, such as new skills, equipment, resources, ideas or positive future prospects? If the answer is no, we should ask ourselves why we work through the projects, loaded with bureaucracy, why not instead, go direct to the level of concrete needs? On the other hand, if the answer is yes, we have succeeded and no more needs to be said. Let us learn about the drawbacks and successes of this particular project and let’s go to plan new, more improved projects.

References

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Appendix 1, Evaluation instructions for the project partners

Evaluation instructions for the project partners

First of all, I hope you don't find these instructions too hard to carryout. I am also sorry that a detailed description of the evaluation tools has come so late in the project. One reason for this has been the multicultural and experimental nature of the project, which I have found quite challenging. Now we have entered the phase where I will need your help to get the evaluation data. Due to the different versions and implementation levels of our distance learning models, the data gathering methods can vary slightly in different countries. However, we should aim to use as similar methods as possible. Comparable material is essential when implementation is going on in five different countries and cultures. The evaluation is based on accurate data which is gathered by all the project partners.

1. Introduction

Please, follow these instructions as carefully as possible. Read this paper attentively; make your own notes with an eye to possibly writing a memo for the evaluator containing your own remarks and modifications concerning the data gathering methods. If you are making exceptions to the guidelines presented in this paper, you need to provide detailed enough arguments for your changes, so that I can justify them in final evaluation report. Remember that you will need to inform me about all the possible modifications before 14th of February 2007 in the form of a written memo.

Evaluation tools selected for MustLearnIT project are:

1) Focus group interview
2) Questionnaire for teachers
3) Questionnaire for pupils

Estimated time needed for completing evaluation tasks presented in this manual is about 22 hours effective work total. Of course this might vary some depending on resources in use and the scale of implementation. Anyway, the work load shouldn't be too bad and the job is clearly benefiting its performer as well, in such a way that local ideas and opinions about the project become familiar and minute.

2. Focus group interview

The focus group is a type of group interview. The idea is to produce good conversation on given topics. In the focus group method participants are allowed to say anything they would like. The social semi-public nature makes the data collection unpredictable and vivid. However, focus group is not the best way to study an individual's view point because social

norms are involved in group conversation. To get individual viewpoints, in the MustLearnIT project we are using separate questionnaires for teachers and pupils.

In a focus group interview the idea is to find a common understanding related to the issue at stake. The best way to achieve this is to put educational experts and project teachers in the same group to talk about the pre selected themes. The moderator's role is very important. However, after setting a few basic rules for the discussion, a focus group interview can be carried out quite easily. Keep the conversation warm but not hot. Follow the themes presented in this paper (see appendix 1). It is also good to remember that moderators should give enough space for ideas arising from the group. Be sensitive and flexible. Be prepared to guide the conversation into the new tracks if you find weak signals about issues that could be interesting. The challenge is to keep the group focused enough, with the discussion relating to one theme at a time.

Try to get more than three people into the focus group. In the MustLearnIT project there could be a combination of the remote school teacher(s), central school teacher(s) and educational expert(s) from the project itself. One moderator is enough and she/he should be prepared well enough for the conversation before the real action begins. It would be good if we can use similar themes listed in appendix 1 in all five countries. Themes generated here are not too accurate because we are looking for unique perspectives through the conversations.

A report based on the focus group will feature patterns formed by words, called themes or perspectives. It is not important to know how many people in the group are having a certain opinion, but more important is to find perspectives shaped together during the interview. The focus group conversation is an effective tool when formulating mutual understanding and information which in addition can help all of us to shape our thoughts and attitudes about the project.

- Translate themes (in appendix 1) in your native language (Poland, Cyprus and Greece)
- Select the moderator and participants of the focus group
- Arrange suitable date for meeting. Remember that the meeting can be done also in Centra if a live meeting is impossible to arrange. You will get the best results in a live meeting. With a little bit extra planning a Centra meeting can also be carried out successfully
- Preferred time for a well focused conversation is about 1h 20 min
- Recommended time to do this is in February/March 2007
- Record the focus group conversation on audio tape. In Centra this is pretty easy to do with the recording tool
- As soon as possible after the session listen to the conversation again and make a memo for the evaluator
- Point out those themes which can be valuable according to the research purpose

- Recommended time to send memo to evaluator is in April 2007

3. Questionnaires

Questionnaires for teachers and pupils can be found from appendix 2 in this document. Translate questionnaires in target country mother tongue when needed. If you are changing the original idea, modifying questions or dropping something off, please describe these possible changes in a memo to the evaluator. Recommended time to complete questionnaire is during the April 2007. Once again, if changes are made to the schedule, please inform me in a memo.

In the teachers' questionnaire, there is a single open ended question at the end of the form. Please, remember to translate the answers to this one into English before sending the questionnaires to Finland. Just in case, you should take copies of all the filled questionnaires before sending the originals to me in May 2007.

4. Finally

Now you have nearly read all the instructions concerning the evaluation. The material to be collected for evaluation purpose in this project is available for all of us. I am going to feed in some quantitative data for example into the SPSS (statistical analysis computer program). Qualitative data, like group interviews memos, can be normal text files or Word files. We can upload all the data containing files into the project portal at some point. The data can be used by all of us when doing research, writing articles and conference presentations.

If you feel that all of this is unnecessary because there might not be enough results in your case, try not to push straight forward. Instead, select a detour! During the project, what were the obstacles that prevented things from happening, what have you learned when crawling with difficulties? From the view point of research, setbacks and failures are pivotal information that can be used when planning new projects. All the experiences are valuable data from the evaluation perspective. Carry out this data gathering well, a lot has been done, and the final evaluation report is then on my shoulders.

Remember that you will need to inform me about all the possible modifications before 14th of February 2007 in the form of a written memo. If I do not get any memos before 14th of February, I assume you are going to follow the instructions as described in this manual. If you need any help, please don't hesitate to contact me. I will try to do my best from Finland even if there is some geographical distance between us.

Thanks for your help and regards from snowless Kokkola,

Appendix 2, Focus group interview themes

Focus group interview themes

Themes and sub themes listed below are guidelines for you. You are allowed to promote your own themes and emerging perspectives during the conversation.

1. Before starting with the themes, write down the participants' names, gender and position on your memo

2. Date of interview memo, starting time of interview

3. Distance learning and/or computer aided learning experiences before the MustLearnIT project

4. How participants find the role of ICT in the schools and in the MustLearnIT project
   4.1. Generally, does ICT generate good learning and teaching?
   4.2. Can you give any practical examples of your own work?

5. Multigrade teaching, ICT and distance learning

6. Usability of selected distance learning model in MustLearnIT project. Does it work?
   6.1. Usability of online learning material and methods, any examples or happenings
   6.2. Usability of distance learning lessons and methods, any examples or happenings
   6.3. What actions have you taken to integrate central school and distance class into a single virtual classroom?

7. Motivation level of pupils
   7.1. Are pupils more or less concentrated if compared to normal class room working?
   7.2. Good sides and bad sides of distance learning from the view point of motivation
   7.3. Examples
   7.4. Learning results

8. Are there any advantages/disadvantages from the perspective of language teaching?
   8.1. What kind of methods have you used?

9. Ideas for future, how distance learning could be improved
   9.1 During the project, did you get any new ideas related to your daily work?
   9.2. Would you do anything in another way when looking at history of the project?

10. Stopping time of interview

Appendix 3, teachers questionnaire

ENG

Questionnaire for teachers

A1 [Answer in BLOCK CAPITALS]

Respondents name?

_ _

A2 [Circle only one alternative]

What is your gender?

1. female 2. male

A3 [Answer in BLOCK CAPITALS]

Name of school?

_ _

A4 [Circle only one alternative]

School’s position in MustLearnIT project?

1. multigrade school 2. central school

A5 [Answer in BLOCK CAPITALS]

How many years have you worked as teacher?

_ _

A6 [Answer in BLOCK CAPITALS]

What age are your pupils?

_ _ _ _ _ _ _ _ _ _ -- _ _ _ _ _ _ _ _ _ _

B1 [Circle only one alternative]

How often do you use the computer at work?

1. not at all 2. occasionally 3. once a week 4. several times a week 5. daily

B2 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate your own skill level as a computer user?

1. poor 2. tolerable 3. average 4. good 5. excellent

C1 [Answer in BLOCK CAPITALS]

How many computers are available for pupils to use at your school?

_ _

C2 [Circle only one alternative]

What kind of internet connection is available for pupils at your school?

1. ISDN 2. DSL 3. fixed cable

C3 [Circle only one alternative]

Is it possible to use video conferencing equipment at your school?

1. yes 2. no

D1 [Circle only one alternative]

Have you had training to use equipment and computers as part of the MustLearnIT project?

1. yes 2. no

D2 [Circle only one alternative]

Have you had training in using distance learning techniques /equipment as part of the MustLearnIT project?

1. yes 2. no

E1 [Circle only one alternative]

During the MustLearnIT project, it was possible for schools to use online learning material through the internet. With the online material pupils can work by them selves. How often was this online material used during the project?

1. not at all 2. occasionally 3. once a week 4. several times a week 5. daily

If online material was not used at all, you can ignore section E and continue directly with section F.

E2 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the pedagogical quality of the online learning material in the project?

1. poor 2. tolerable 3. average 4. good 5. excellent

E3 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the technical quality of the online learning material in the project?

1. poor 2. tolerable 3. average 4. good 5. excellent

E4 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the motivation level of pupils while using the online learning material?

1. poor 2. tolerable 3. average 4. good 5. excellent

E5 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the interaction activity of pupils while using the online learning material?

1. poor 2. tolerable 3. average 4. good 5. excellent

E6 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the learning results of pupils while using the online learning material?

1. poor 2. tolerable 3. average 4. good 5. excellent

F1 [Answer in BLOCK CAPITALS]

During the MustLearnIT project, a distance learning model was built between multigrade schools and the central schools. How many distance learning lessons were arranged during the project?

_ _

If no distance learning lessons were given at all, you can ignore section F and continue directly with section G.

F2 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the pedagogical quality of the distance learning lessons in the project?

1. poor 2. tolerable 3. average 4. good 5. excellent

F3 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the technical quality of the distance learning lessons in the project?

1. poor 2. tolerable 3. average 4. good 5. excellent

F4 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the motivation level of pupils participating in distance learning lessons?

1. poor 2. tolerable 3. average 4. good 5. excellent

F5 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the interaction activity of pupils participating in distance learning lessons?

1. poor 2. tolerable 3. average 4. good 5. excellent

F6 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the learning results of pupils participating in distance learning lessons?

1. poor 2. tolerable 3. average 4. good 5. excellent

G1 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the quality of cooperation between the central school and multigrade school?

1. poor 2. tolerable 3. average 4. good 5. excellent

G2 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate what kind of effect the MustLearnIT project had on multigrade teaching in practice?

1. poor 2. tolerable 3. average 4. good 5. excellent

G3 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate what kind of effect the MustLearnIT project had on language teaching?

1. poor 2. tolerable 3. average 4. good 5. excellent

H1 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate how well local expert institution organised the MustLearnIT project?

1. poor 2. tolerable 3. average 4. good 5. excellent

H2 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the support given by the local expert institution in the MustLearnIT project?

1. poor 2. tolerable 3. average 4. good 5. excellent

K1 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

Evaluate the general usability of the distance learning model developed during the MustLearnIT project?

1. poor 2. tolerable 3. average 4. good 5. excellent

K2 [Answer in BLOCK CAPITALS]

Explain shortly the answer above

_ _

_ _

_ _

_ _

_ _

Thank you very much for answering these evaluation questions!

Appendix 4, pupils questionnaire

ENG

Questionnaire for pupils

A1 [Circle only one answer, you can ask the teacher for help]

Schools position in MustLearnIT project?

1. multigrade school 2. central school

A2 [Answer in BLOCK CAPITALS]

What is your name?

_ _

A3 [Circle only one answer]

Are you a girl or a boy?

1. girl 2. boy

A4 [Answer in BLOCK CAPITALS]

How old are you?

_ _

A5 [Answer in BLOCK CAPITALS]

What is the name of your school?

_ _

B1 [Circle only one answer]

Do you use a computer at home?

1. yes 2. no

B2 [Circle only one answer]

Do you use the internet at home?

1. yes 2. no

B3 [Circle only one answer. Scale 1-5, where 1= poor and 5= excellent]

How well can you use the computer?

1. poor 2. tolerable 3. average 4. good 5. excellent

C1 [Circle only one answer]

Your class has taken part in an experiment where computers are used for learning. Have you used the computer to do exercises in school?

1. yes 2. no

C2 [Circle only one answer]

Are computer exercises better than book exercises?

1. yes 2. no

C3 [Circle only one answer]

Are computer exercises difficult?

1. yes 2. no

C4 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

How well do you learn while making computer exercises at school?

1. poor 2. tolerable 3. average 4. good 5. excellent

C5 [Circle only one answer]

Do you get enough help from the teacher while working with the computer?

1. yes 2. no

C6 [Circle only one answer]

In the future, would you like to use the computer more for learning?

1. yes 2. no

D1 [Circle only one answer]

Your class has taken part in an experiment where distance learning has been tested. Have you seen teachers or pupils on the big screen or on the computer display?

1. yes 2. no

D2 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

How good was the quality of the video picture?

1. poor 2. tolerable 3. average 4. good 5. excellent

D3 [Circle only one answer]

Have you heard a teacher or pupils through the loudspeakers or headset?

1. yes 2. no

D4 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

How good was the sound quality?

1. poor 2. tolerable 3. average 4. good 5. excellent

D5 [Circle only one answer]

Have you spoken into the microphone during the distance learning lessons?

1. yes 2. no

D6 [Circle only one answer]

Have you spoken to the camera during the distance learning lessons?

1. yes 2. no

D7 [Circle only one answer]

Are distance learning lessons better than normal lessons?

1. yes 2. no

D8 [Circle only on alternative. Scale 1-5, where 1=poor and 5=excellent]

How well do you learn when taking part in distance learning lessons?

1. poor 2. tolerable 3. average 4. good 5. excellent

D9 [Circle only one answer]

Would you like to have more distance learning lessons in the future?

1. yes 2. no

Thank you very much for answering these questions!