



YSE: Yourvid Save Energy, 504331-ES-2009-CMP

WP2 Research: Final report

State of the art "using digital video in secondary schools"

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Introduction

The purpose of this report is to present the findings of a research into the state of the art in Digital video and Sustainable Energy at Secondary Education in Europe. The research was organized into 3 main general topics: 1) Analysis of best practices of educational video in each country; 2) Use of digital video in secondary education and the presence of these videos on social networks; 3) Sustainable Energy topics existing in the curriculum of Secondary Education in each country. To achieve these objectives we did an exploratory research in the next areas:

- A.- A study of secondary sources and sustainable energy video.
- B.- Analysis of opinion with users and experts in the field.
- C.- Comparison of the experiences of teachers who use and not use digital video in their teaching procedure.

Methodology

The first part of the research deals with a web search about secondary sources in Digital Video and Sustainable Energy websites in each partners' country. The second part consisted of expert's interviews on the topics of Sustainable Energy and Digital Video. The third was two Focus Groups, one with students and the other with teachers, in which we asked about attitudes on using digital video and working at schools in the field of Sustainable Energy. The fourth part of the research consisted on the application of a questionnaire to teachers from 6 countries (Spain, Italy, Greece, Germany, Lithuania and Bulgarian), asking them about their preferences and attitudes regarding to the main topics of the research: Digital Video and Sustainable Energy subjects in the Secondary schools.

- a) In the research of secondary sources, the information was gathered from websites of Digital Video and Sustainable Energy using search engines.
- b) Interviews were conducted to a Digital Video expert and a Sustainable Energy expert.
- c) Focus groups were made with students and teachers from Secondary Schools.
- d) Questionnaires were delivered to teachers in 6 countries.

Results

In the next pages we are going to present the results per partner and area of the research.

A. Study of secondary sources: educational video and sustainable energy

Spanish Confederation of Educational Centres (CECE), Spain, (Partner 1)

During the research we found out many website, articles, news and other online resources with useful information for the topics of Digital video and Sustainable Energy. Websites of digital video and Sustainable Energy, bibliographic resources, previous reports, best practices, Social Networking with educational videos.



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Some of these links are good examples of the use of Digital video for teachers in Spain. Other make didactical suggestions about the topic of Sustainable Energy and environmental education at school. Also we found some school projects in the field of Sustainable Energy in Europe education.

Europartners 2000 foundation, Bulgaria, (Partner 5)

We have made a research on several websites, articles and comments, postings and news about sustainable energy and digital video, mostly in English language and less in Bulgarian language.

Websites of energy and eco organizations and companies, digital video on sustainable energy, bibliographic resources and references, previous reports from national and international organizations, best practices, social networking with videos for educational and information use.

Digital videos are produced by youth and students in the classrooms. They express concern about the ecological issues like pollution, waste processing, separation of wastes, saving electricity and water, and keeping tidy the environment. In some cases teachers together with students have initiated digital videos for use in the school.

Natural History Museum of Crete, University of Crete, Greece (Partner 6)

The study of secondary sources delivered the following outcomes. In Greece, only the last few years, teachers are getting to be familiarized with the new technologies in education.

Many of them use educative videos in their teaching approach, but very few have created videos with their students in the school. There are not adequate technical means in Greek schools to support the use of new technologies in the learning procedure. On the other hand, Greek students are well familiarized with the applications of new technologies, but they lack the opportunity and the motive to put their knowledge and their creativity into use for a specific educational purpose.

Kolping-Bildungswerk Wuerttemberg e. V., Stuttgart, Germany (Partner 7)

The research revealed that the two topics are seldom linked directly with each other. Therefore the research was divided into two categories: 1. working with digital videos in the classroom and 2. Sustainable Energy. The research generated very helpful information. 1. Working with digital videos in the classroom: e.g. websites especially tailored for teachers introducing concepts for the use of video in the classroom (e.g. Language or History lessons) and introducing media tools (podcasts, video equipment etc.), media support services for schools. 2. Sustainable energy: e.g. websites offering teaching/learning material about energy subjects for schools as well as various regional and national school campaigns fostering energy saving at schools.

Marijampolė VET centre, Marijampolė, Lithuania (Partner 8)

The theme is not new in Lithuania. The use of digital videos in the classroom is not very popular. Mostly video is used in geography, physics, IT, chemistry, biology, foreign languages. The topic of sustainable energy is mostly used in the projects, social actions. The information for society is very wide and accessible. But in schools the theme of sustainable energy is too little integrated into teaching and training process. The teaching of effective use of energy monitoring and integration to school curriculum is possible because EU support funds make their material accessible.

Conclusion: the methods created during this project will be a good tool for teachers to work with IT and the themes of Sustainable Energy



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B. Opinion analysis with users and experts in the field.

B.1.1. Interview expert on digital video

Spanish Confederation of Educational Centres (CECE), Spain, (Partner 1)

New experiences have been done but the ones I've seen are of small and medium scale. That is, in most cases it is the teacher with his students who develop the video themselves, and both implementation and management is finally done by the teacher.

First of all, one has to make sure that the centre has enough technology resources. I mean, there must be computers, video recorders either at school or at home so that students may make and watch videos without any problem. I highly recommend that notebooks are available at schools.

Secondly, a good methodology has to be in place during the whole process of definition and elaboration of videos.

Well, video may be more useful and interesting but you have to work well during the previous stage. Also all the activities done with technology can be very successful.

Moreover, video incorporates something new to current methodology. In my opinion, there are very visual subjects like Art or History where making illustrative videos can be very helpful for students.

I think that social networking can include videos but I am not sure whether they often have an educational character.

Therefore, people should be trained before they can make a good use of videos in social networking. Both schools and families should work together in the learning process and people should show an ethical attitude towards video watching.

Software should be easy enough to be used by everyone so that there are no extra difficulties during the video editing process.

Students can make their own videos when their teachers have an appropriate training and can count with all required equipment.

Furthermore, students prefer to work using videos. In fact this is an incentive for them. They are often more motivated to work. If they make the videos themselves they have to work more, of course, but they like the task and therefore they usually work better this way.

In my view, there are more advantages than disadvantages when videos are used in schools.

Centre di Studi Villa Monteca, Italy, (Partner 3)

Television and didactics: from TeleScuola to the Vook - Raffaele Rago, Film-maker

The relationship between television and the Italian school system goes back a long time.

RAI, the Italian public television, produced in 1958 an educational programme called Telescuola as a contribution to the education of the Italian population followed at the beginning of the 1960s by *Non è mai troppo tardi* (It's never too late- 15 November 1960) in which the school teacher Alberto Manzi taught a class of illiterate adults how to read and write. The programme (400 lessons broadcasted in prime time) was considered highly innovative thanks to its teaching techniques (audio and video supports, graphics and animation, simulations) which could be thought of as multimedia tools ahead of their time.



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However, after these two experiences there was a slowing down followed by the complete disappearance of educational programmes in generalist television the main reason being the impossibility to match the time and needs of teaching programmes with commercial television (audience and commercials).

Nowadays with the introduction of digital television and New Media both communication and information are undergoing a radical change which is leading to a process of 'wide rage multimediality'. This process plays a key role in taking media and television back to an educational mission overcoming the limitations set by the logics of generalist television.

One of the educational opportunities which could be considered 'the last frontier' offered by digital television is the Vook. This is an integrated text, audio-video resources, multimedia and web tools system which has already found its place mainly in the North American market.

One of its strongest supporters is the bestselling writer Anne Rice (Interview with the Vampire) who has recently published a story using the Vook as a support.

Although the multimedia resources in the Vook are mainly used for 'entertainment' they are also potential teaching tools.

In Italy the publisher Treccani has printed a guide of Sicilian art in Palermo in a Vook format and is now developing another project on the history of the Via Francigena.

In 2009 the University of Milan experimented the use of a Vook in a communication master course: the outcome was an increased level of attention and interest in studying using a Vook.

The issue now is: can a Vook become a central teaching tool or is it only a support to traditional teaching? The answer could lie in continuing the experimentation of these new tools together with the 'old ones' and assess the quality of interaction and integration.

Europartners 2000 foundation, Bulgaria, (Partner 5)

Oleg Pavlov, an academic in Sofia University and producer of educational video games and films, has shared his views as follows:

- Video films must be used more nowadays, it makes lessons more interactive and interesting.
- Times have changed and today in every school we have computer labs with high speed internet. They are well equipped.
- These new education methods have a great future in the country.
- Some digital videos in the social networks can be used for the educational process. Others can be taken as a authors hobby or by curiosity.
- I recommend that the beginning of the training has to start in the schools and skills to be developed. Parents and teachers should be also trained.
- The use of digital videos makes the lessons more interesting for the students. Youth likes creating videos and sharing with friends and classmates.
- Users of digital videos see a great future and more positive emotions in the classrooms.

Natural History Museum of Crete, University of Crete, Greece (Partner 6)

In Greece, the use of educational video in the classroom is serving a specific educational purpose by initiating the dialog between the teacher and the students on a variety of subjects (climate change, safe



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internet, etc.). Meanwhile, students are “exposed” to experiences that cannot occur in any other experiential way. Concerning the advantages arising from the direct involvement of the students to a video production project, we have to ad measure the possibilities for self expression familiarizing with the use of simple technological means, enhancement of communication among students and, in overall, the possibility to develop their personality in a more multilateral way. On the other hand, the impact of exposure to the media, such as the internet, and its implications in students’ psychology is considered a substantial drawback.

Kolping-Bildungswerk Wuerttemberg e. V., Stuttgart, Germany (Partner 7)

Until now he has not seen educational videos in social networks, but he could imagine that are very useful, in order to support specific audiences. He sees the following advantages when students are making their own videos: Fun in learning and a higher incentive for the students. The students deal intensively with a subject matter and finally create something great that can encounter positive attention beyond the classroom. Disadvantages: Video projects are quite time-consuming and there may be serious difficulties in obtaining usable information material and considering obstacles such as copy rights.

Marijampolė VET centre, Marijampolė, Lithuania (Partner 8)

Most of the teachers have used digital material in the lesson at least once, but it is not popular. The teachers of various subjects use digital for other topics - not for saving energy. It is possible to use IT for all parts of the lesson. Teachers can find much information in social networks, internet.

The expert sees many advantages in the use of digital material.

Conclusion: video production stimulates creativity of students, the expression of original ideas, develops IT competences, and teaches working in team and individually. Use of IT and video may make the process of teaching process more modern, attractive, and essential.

B.1.2.-Interview: expert on sustainable energy

Spanish Confederation of Educational Centres (CECE), Spain, (Partner 1)

In order to clearly explain this double term, I think that “energy” refers to the force or capacity to develop a piece of work while “sustainable” refers to the need for this energy to come from clean, renewable and inexhaustible sources. This briefly explains the whole concept of “sustainable energy”.

We have tried to approach schools through one particular message or action, for example, with a campaign or exhibition. By this we have tried to convince both teachers and students, by calling their attention on energy issues and we have used a relevant methodology that included clear concepts to put forward our message.

In particular some photovoltaic solar panels have been installed along with a control system in the school hall in order to measure all the energy that comes out of it at all times. This system that controls emission and spillage level makes it possible to regulate the environmental behaviour of these schools.

I think that social networking is very important to reach many young people and transmit clear messages in favour of the use of Sustainable Energy



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Today, many young people participate in social networking in one or another way . For example, Twenty is very popular in Spain. So, I think that social networking is very important to reach many young people and transmit clear messages in favour of the use of Sustainable Energy

We have worked with an Italian partner in a project named Energames in Avila

In addition, we also have DVD presentations about sustainable energy at our schools.

Working with students is essential for the future. I mean, every action we can take at schools will be beneficial to the use of sustainable energy in the future.

Centre di Studi Villa Monteca, Italy, (Partner 3)

Sara Massoli, Engineer, Energy and Environment Agency of Perugia

From my didactic experience, I believe that there is not a definitive approach to adopt regarding these matters of energy and environment; it's safe to assume that the approach depends on the activities we partake.

There are, anyway, some activities that we like the students to follow, to make it so that they are not only trained but also involved directly in the activity.

So we try to train the students through lessons, and then we arrange hands-on lessons that will help the students acquire both knowledge and proficiency.

E.g.: as a part of the YEP Project, we first prepared the student and then we gave to him a tool to be used for the energetic analysis of his own house/building.

So, in order to make the students able to become prospective technicians, we gave them a methodology they can use and employ to learn new skills in prediction of their future career.

As another Didactical Approach, other than practical activities, we also employ videos, guided tours together with schools and institutes.

As an example, when we are talking about a specific machinery, it is of course better if the student sees it where it is installed; like photovoltaic implants that are very widespread in schools.

It is very important for the student that he realizes that the implant is present in the very building he goes to everyday; This way they will understand that this technology is already used and in constant development.

Europartners 2000 foundation, Bulgaria, (Partner 5)

- He is an expert on subjects concerning sustainable energy and he has implemented a solar panels park near the capital.
- The sustainable energy is the energy we could use today and in the future. This is the energy that can regenerate and never ends. I have very often meetings and visits by students from Sofia, explaining them the solar energy use and the advantage of using it. This can be a demonstration of "sustainable energy". It is clean and doesn't pollute the environment.
- Students visiting our park start thinking in a way of perceived use of the energy. Some schools visitors take photos and later one they organise Day of Energy or Green Days and photo exhibitions.
- review expert on Sustainable Energy



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- Schools are visiting our solar panels park, we also invite students, teachers and parents during our Open Door Days and we present this technology of production of eco-electricity.
- The message we send is that the solar energy is a future in the country, there are no spills and pollution to the environment, it is ecologically friendly.
- We clearly give ideas for reflecting on the youth.
- We describe and compare by giving examples with other energy sources like coal, oil, gas (LPG), water and thermal waters.

Natural History Museum of Crete, University of Crete, Greece (Partner 6)

In Greece, the term Sustainable Energy is perceived as “the energy that is used today by new generations, and will be available tomorrow, for future generations”. Towards the direction of raising awareness at school, many educational projects have been implemented (inside and besides the curriculum), related to the fields of energy & environment, energy & human society, energy & renewable sources, etc. Some of the best practices for sensitizing teachers and students on the vital issue of Sustainable energy involves training sessions of teachers on related subjects, energy saving practices at schools, lectures by specialists at schools and excursions to solar and wind parks.

Kolping-Bildungswerk Wuerttemberg e. V., Stuttgart, Germany (Partner 7)

He states that it is important to sensitise the students that the “oil age” gets to an end. It is important to point out that it is not late and there are alternatives: Sun, wind and water are renewable energy sources. Fuel cells and batteries allow mobility without oil. Best strategies are excursions to the nature, visits to companies and institutions dealing with the topic as well as laboratories in schools. Good practices are school competitions and summer schools. He points out that the teacher training content should consist of objective and substantiated training material because energy issues are a highly politicized topics and therefore discussions are often very controversial and little factual.

Marijampolė VET centre, Marijampolė, Lithuania (Partner 8)

The expert states that as the resources of unearthen fuel are limited, besides firing it pollutes the environment, it is essential to discuss about the ways how to use the energy the sources of which are sustainable. Modeling the view of the young people now will have big influence later for decisions in future.

Main idea of positive impact: using all kinds of teaching methods, all possible knowledge resources, it is possible to create them and introduce new projects in lessons, to orient students for the strengthening of energy saving, lessening the pollution.

B.2.1. Focus group students

Spanish Confederation of Educational Centres (CECE), Spain, (Partner 1)

The use of the video in the classroom is highly valued by all participants.

They prefer that the video is presented through a dynamic methodology, by which it is related to a particular Project or issue and is followed by group discussion.

Educational video is defined by young participants as the video which teaches a lesson about a topic they don't know much about. It should also have a clear message which an important impact on the audience.



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Young participants like images that can illustrate a problem. They should be clear enough an appeal to most publics. They should also be familiar and show changes in order to call audience's attention.

Music should appeal to young people.

Most agree on having videos on social networks in order to see them there.

They have a wide knowledge of video software. So they can download or edit videos themselves.

They define it as a clear energy that does not pollute the environment; it can be used in exhaustively and that's why it will reach the future. It will end up with the most serious problems that affect the planet.

Centre di Studi Villa Monteca, Italy, (Partner 3)

According to the 22 students of 3C Biological "Brocca" in Perugia:

- Videos help to better understand the concepts in Social Networks.
- Sometimes these can be rather impersonal, owing to their virtual character, compared with direct contact.
- Students often use the Internet both at school and at home (Youtube, Windows Media Player and Quicktime) as well as Office programs. Their preference is for short videos containing captivating images.
- Schools should have more computer resources powered by alternative sources of energy such as photovoltaic panels.
- Technology should be more and better used in all research activities in schools.

Students involved in the focus group use electronic blackboards and e-books and have pointed out that:

- these tools are useful in class since the topics of the subjects can be looked into more deeply through links and experimentation. However, they are not very helpful for homework.
- they are more useful for science subjects
- an electronic blackboard is a good solution, not so much the e-book
- they increase concentration in class and give a better chance to acquire a more in-depth view at home
- their level of usefulness is rather low if not used together with books

Europartners 2000 foundation, Bulgaria, (Partner 5)

- VIDEO USE
- All students like the use of videos during the classes.
- Videos present the problems in a summarised way. The videos directly accent the issues. It is different than the textbook, the problems are visualised and are more close to the reality. They present through a dynamic methodology, by videos it is related to a particular problem or issue, and it can be followed by a group discussion.
- Videos, produced for the students in schools contain very new facts and technologies which sometimes are not presented in the textbooks.
- IMAGES



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- Students accept the digital photos which accent to a specific issue. Photos must “speak” themselves about the problems. Good photos will attract young people definitely.
- MUSIC
- Students like videos with music.
- SOCIAL NETWORKS
- Students accept the presence of digital video in social networks they usually use.
- VIDEO SOFTWARE
- They have a wide knowledge of video software. So they can download or edit videos themselves.
- SUSTAINABLE ENERGY
- They define it as a clear energy that does not pollute the environment; it can be used exhaustive way and that’s why it will reach the future. It will end up with the most serious problems that affect the planet.

Natural History Museum of Crete, University of Crete, Greece (Partner 6)

Many and different opinions were expressed by students. The majority of the group agreed that uploading educational videos at social network websites (e.g. Youtube) is very useful, because such pages are extremely popular among young people. Short duration videos of intriguing content (shocking images) projected on large screens are some of the preferences reported by students. Many highlighted the urgency for upgrading the existing school infrastructure (projection theatres) and, also, the necessity for technological modernization (computers, projectors etc.). Regarding the best strategies for raising awareness on the matter of sustainable energy, students proposed, among others, placement of recycling bins at their school yards, installation of photovoltaic systems on rooftops and circulation of proper informative material.

Kolping-Bildungswerk Wuerttemberg e. V., Stuttgart, Germany (Partner 7)

The students state that they do not know educational videos in social networks until now. There are suspicious of YouTube with regard to educational aspects and quality of the videos. Preferences concerning educational videos are: videos should be supplemented by written information; the videos should be short, amusing and available for download. Furthermore the students expect a higher technical competence of teachers in general and think that teachers should have the disposition for further training in using new media. The subjects “environment, energy saving and sustainable energy are part of the German school curricula. The awareness of the complex of energy saving and sustainable energy exists, but the motivation to act is missing; the relevance to the own life is not mediated in the right way. The subjects should be treated in an interdisciplinary way e.g. calculation of energy saving in math lessons.

Marijampolė VET centre, Marijampolė, Lithuania (Partner 8)

Most students (78%) know about the resources of Sustainable Energy In school the subjects that mostly deal with this topic are physics and geography. Even 80% of respondents understand the saving of energy as the saving of existing resources, but do not connect it with the Sustainable Energy Video creation and use in the lessons stimulate and teach students to save energy. The access to video in social networks is a good stimulus to be interest in this problem. Students do not connect topics of sustainable energy with the IT, even if they speak about it at school. Even 51% of respondents do not have any opinion about the development of technical equipment at school. 7% think that interchange of information and use of experience will be of much use.



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B.2.2.-Focus group teachers

Spanish Confederation of Educational Centres (CECE), Spain, (Partner 1)

There is substantial agreement on the **use of video in the classroom** as a dynamic resource for supporting curricula.

Teachers believe that the image has to be clear and help to recall things. It can also be used to enlarge students' understanding. Therefore, the video format has to be simple, clear and very inspiring. In essence, it should allow students to memorize things.

Before video watching, teachers think that students have to know why they are going to watch it, that is, what's the point in watching the video. So, a video analysis is required first.

Images are the most important part of a video. They have to be catchy and attractive so that students are inspired by them.

Images should also be suitable for students' age.

Music is very important because it allows to catch students' attention and transmit feelings and emotions. It also helps to keep people's attention.

Although most teachers don't agree on the use of social networks, they all agree that they can be used to upload and download videos.

They know a lot about video software and where to find different software programmes on the Web. They mention: Real Player, VLC, Media Player, YouTube, among others.

As for sustainable energy, teachers think that this type of energy doesn't have any impact on the environment. In addition, it makes profit of natural resources. Therefore, it is important to inform and raise people's awareness about this type of energy, teaching a lesson to the whole society accordingly.

In essence, sustainable energy is important for a clean energy future since it respects nature and allows the consumption of resources without polluting. Finally, sustainable energies are believed to be very expensive and therefore a general use of them by society keeps being difficult or impossible, unless, as one teacher points out, one considers that nuclear energy is also sustainable.

Centre di Studi Villa Monteca, Italy, (Partner 3)

Centro Studi e Formazione Villa Montesca organised a meeting for teachers taking part in the Euclides, Bridging Insula Europae and Lethe projects Tuesday, April 13 at 4.30 p.m.

The meeting was attended by 8 teachers representing 6 schools: Liceo Classico Plinio il Giovane, Liceo Scientifico Galileo Galilei, IPSSARCT Cavallotti, ITIS Franchetti, ISIS Patrizi Baldelli, ITCG Salviani.

All teachers attending the meeting are currently using videos in classroom activities and consider them very important support tools.

Videos have the advantage of presenting the issues in an interesting way, thus favouring observations and discussions by the students.

Animation videos are especially important in teaching science subjects with very interesting and useful simulations that capture the students' attention.



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Research including English key words gives excellent results in Youtube videos

Few teachers use the multimedia interactive blackboard. Because of its novelty, this could be an important tool for capturing the students' attention.

There is little sense in just watching videos without previous preparation and debate, since the issues raised during classroom work should bring about study and research activities also after school time.

One of the limitations generally agreed upon is that schools have limited access to tools such as laboratories, projectors, videos, video-libraries, hence the impossibility to use video-didactics systematically and originally.

Some teachers produced videos and short films on their experiences at school, school trips, workshops and promotion of their town.

Video production is considered a very important activity since it encourages the students to reason and debate on the content and quality of the videos themselves. The production and use of videos by the students depends mostly on the teachers' good will.

Europartners 2000 foundation, Bulgaria, (Partner 5)

- USE OF THE VIDEO
- Teachers agree and support the use of videos during the classes because they consider videos as a tool for pro-active teaching of the subjects.
- Videos contain a summarised information and message and it is easy for students to understand the issues. The used videos are elaborated by experts and designed for educational purposes.
- Teachers elaborate a plan of the lesson and insert the video in the plan scenario by one-time-watching or stopping where and when is necessary, to accent on the problem.
- VOICE AND MUSIC
- Teachers appreciate very much videos with voice and music. They give to the students more concentration and emotional satisfaction when watching the videos. Voice and language should be appropriate to the audience – in native or foreign language.
- SOCIAL NETWORKS
- Teachers accept positively the use of social networks. Still the implementation is not enough clear but it is a field to be explored more.
- VIDEO SOFTWARE PROGRAMMES
- Mainly the Microsoft programme (s) and less of others with free application.
- SUSTAINABLE ENERGY
- Teachers understand the sustainable energy as a definition of non-polluting energy – solar, water (thermal waters) and wind, with little negative impact on the environment, that will be available for next generations. In comparison oil and gas quantities will finish in 60-100 years.
- Definitely oil, gas and coal energies are not sustainable. Biogas stations and nuclear stations – not in the present way of use.



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- Students and even parents, the whole society should be aware of the problem and try to use these sustainable sources of natural energy. Preliminary investments can be huge that can preserve the nature for years ahead.

Natural History Museum of Crete, University of Crete, Greece (Partner 6)

All teachers highlighted the fact that Greek schools in general, are not adequately equipped (from technological and infrastructural point of view), which makes the adaptation and implementation of new didactical methods more difficult. Concerning the usage of educational video as a teaching tool, the majority of teachers agreed that the particular mean presents many advantages (it is very appealing to students, increases their interest and motivates them). At the same time they pointed out that educational video must be used in combination with other teaching techniques, in order to achieve a more holistic didactical approach. Climate change and sustainable energy, laptops and TV sets as well as windows media player are on the top of their preferences, regarding topics, devices, and software respectively.

Kolping-Bildungswerk Wuerttemberg e. V., Stuttgart, Germany (Partner 7)

The teachers are using digital videos (incl. DVD) as educational tool. The selection of good material is very time-consuming and with regard to videos from the internet they have to consider the half-legal aspect (YouTube-Download). Some teachers already realized film projects with students – they mention the following advantages: students are working independently, they learn how to handle media, their motivation increases, the learning experience is more intensive and knowledge acquisition is more enduring. But the teachers mention as well obstacles: time aspect (there is few time during normal school curricula – teachers and students have to invest free time in case they would like to make a film project), technical aspect (lack in technical competence of students and teachers) and facilities aspect (internet connection, updated software).

Marijampolė VET centre, Marijampolė, Lithuania (Partner 8)

Video material in the class is used for explaining new theme- as the introduction, theme for discussion, explanation of the new material. Video created by schoolchildren may also be the project work. Advantages of using video - the lesson is more modern and live. The motivation of students is better, they are interested more. It is possible to find interesting films and clips.

When students make their own videos at school, the active teaching methods are used. The students are motivated. They integrate some subjects- e.g. geography, languages and IT

Teachers have in reality worked with the theme of wind energy use, students created videos for various topics of physics. Very popular themes are assortment of raw materials, recycling

Most schools have technical equipment to work with video, computer classes, multimedia, “clever boards”. It is very convenient if there is internet in the class and it is possible to demonstrate films from YouTube, Google or Facebook. But not all teachers have enough skills or energy or motivation /stimulation to work with video.

C. A comparative study of teachers that using or not digital video in the classroom

Spanish Confederation of Educational Centres (CECE), Spain, (Partner 1)



YSE: Yourvid Save Energy, 504331-ES-2009-CMP

In the sample (N=71) that we have studied, composed by teachers from Madrid, Huelva, Valencia, Malaga, Barcelona, Irun, Alicante, Bilbao, Vigo, Eibar and Castellon we concluded:

The digital video is used over 70 % of the teachers, that means digital video is well known and frequently used.

Windows Media Player (WMV) followed by Real Player are the most popular between the teachers. In the case of Windows the reason could be because this program is included in Windows System. Despite of the teachers do not use digital video, 56% of them knew the WMV software.

All the teachers, both digital video users and not users were interested in the use of videos in the social networks environments for education purposes.

Teacher that use digital video and not use showed a good disposition to use videos from the social networks. One explanation to this result is perhaps can find many resources in social networks like YouTube.

Digital video were considered for all, as an important resource to introduce (showcase) an explain a topic and less interesting to used it in deepening activities.

Also most of them have considered that the use of digital video will be very useful to raise the awareness in the topic of save energy and Sustainable Energy

All the teachers agreed that: "using digital video promotes motivation, is a good tool to support , improve the learning, the class and that implied some changes in the methodology.

Centre di Studi Villa Monteca, Italy, (Partner 3)

The Centro Studi e Formazione Villa Montesca has contacted the headmasters of a number of schools in order to distribute the questionnaire prepared by its partners to a number of teachers in each school. Forty-seven teachers from 8 schools belonging to three municipalities - Città di Castello, Umbertide and Perugia - were interviewed. The schools involved in the project were: IPSSARCT "Cavallotti", ISIS "Patrizi Baldelli", ITAS "Giordano Bruno", ITCG "Salviani", ITIS "Franchetti", Liceo Classico "Plinio il Giovane", Liceo Scientifico "Galileo Galilei", Liceo Scientifico "Leonardo Da Vinci".

70% of the teachers interviewed uses educational videos in normal classroom activities.

Almost all the teachers include the use of educational videos when setting up the teaching programmes and also those who do not follow this line are nonetheless of the opinion that videos are very interesting teaching tools.

The areas in which educational videos could have a string impact are: sustainable energy, life science, climate change, energy saving, history, foreign language, film, cuisine, geography, literature.

The programme normally used or which teachers are more familiar with is Windows Media Player followed by VLC and Real Player, although the last two programmes are seldom used.

Only 1 teacher out of 5 uses Youtube.

The majority of teachers uses videos to provide e deeper insight of subjects, followed, in order of importance, by Introduction, Explanation, Motivation, Strengthening, Assessment.

Teachers who do not use videos in classroom work believe nonetheless that the following aspects would be enhanced by the use of video tools: a more effective explanation of concepts already explained in class, Introduction of new topics, Visual / demonstrative in depth explanation of complex concepts.



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All teachers believe that the use of videos can add interest to topics regarding energy.

Lastly, teachers consider the use of videos in classroom work mostly as a tool to support didactics which makes teaching more effective while promoting student motivation.

Europartners 2000 foundation, Bulgaria, (Partner 5)

- Our study includes a number of 80 teachers from the involved schools in Sofia, Varna, Plovdiv and Hissarya cities - geographically distributed in the country and schools from big, medium size and small cities. The finding from the interviews are as follows:
- Findings and Results
- 65 % (52) of the teachers are using digital videos during the classes, every 2 weeks as frequency.
- Media Player in Windows and Real Player are used the most by the teachers. Teachers, who are not using videos, are aware about digital videos availability and software programmes (17 out of 28 teachers or 60.71%).
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Natural History Museum of Crete, University of Crete, Greece (Partner 6)

We gathered one hundred completed questionnaires from all over Greece. The statistical analysis of the answers, revealed the following results:

1. 66% of all responders has incorporated the use of digital video in their tuition (answered Block A), while only 34% has not (answered Block B).
2. From those who filled in Block A:
 - 68% prefer the topic of Environment, 58% the Energy Saving and 56% the Climatic Change.
 - 74% use video for Deepening, 61% for Introduction and 61% for Explanation.
3. From those who filled in Block B:
 - 71% do not use video because they do not have access and 21% cannot manage the video tool.
 - 68% prefer the topic of Climatic Change and 56% the Energy Saving.
 - 56% would like to use video for Introduction, 50% for Deepening and 47% for Explanation.
4. From all responders:
 - The majority of the responders are familiar with Windows Media Player interface, (92% from Block A and 76% from Block B).



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- A significant percentage is using, or is willing to use, videos from social networks, such as Youtube (76% from Block A and 94% from Block B).
- The absolute majority of the responders believe that students would be more interested by using video in the topic of Energy (97% from Block A and 100% from Block B).
- The majority of the responders believe that the use of digital video promotes students motivation (97% from Block A and 100% from Block B), is a tool to support the class (100% from Block A and 91% from Block B), is not used to fill time (80% from Block A and 68% from Block B), enables more effective learning (97% from Block A and 97% from Block B) and its use requires changes in the teaching methodology (76% from Block A and 85% from Block B).

Kolping-Bildungswerk Wuerttemberg e. V., Stuttgart, Germany (Partner 7)

In general it was difficult to receive answers. On the basis of the general feedback, we assume that teachers who are not interested in both topics did not fill out the questionnaire. This has to be considered as important information for the survey.

A - respondents who are using digital videos

B - respondents who are not using digital videos

- 56% of all respondents are using digital video as an educational tool, 44 % are not.
- The majority of those who do not use videos mention the lack of technical competences, the missing access to resources and missing facilities as reason.
- Both groups (A+B) know Windows Media Player (A: 75%, B: 68%); a significant difference can be seen with VLC Player (A: 54%, B: 5%).
- 57% of the A-respondents are using or would you use videos from social networks or video platforms. Only 32% of the B-respondents would use these videos.
- The majority of both groups thinks that use of digital video promotes students motivation (A: 89%, B: 64%) and is a support to the class (A: 100%, B: 77%). "It enables more effective learning" shows a significant difference: the majority of the respondents of Block A affirm the statement (71%), only 27% of the respondents of Block B affirm the statement.
- Around 50% of both respondent groups think that using videos requires a change of teaching methodology.

Marijampolė VET centre, Marijampolė, Lithuania (Partner 8)

The respondents who took part in the interviews both -who use digital video in their teaching process, and those who do not use- assert that video digital could be used effectively while studying such topics as sustainable energy and energy saving

The respondents (60 percent) who work with digital video know the social networks and use them. 90 percent of teachers who do not use digital video would like to use social network YouTube. They think it is useful to download the digital video into this network.

Almost all the teachers interviewed use Windows Media Player programme.

The majority of the teachers from both groups would like to use video for the explanation of the new topic.



YSE: Yourvid Save Energy, 504331-ES-2009-CMP

To their opinion the use of digital video promotes the students interest in sustainable energy and saving energy. The use of digital video promotes the students motivation and warrant the more effective learning.

Only 14 percent of teachers think that changes of learning methodology influence for the use of digital video in the learning process. The outcome is that new attractive methods are needed for the work with digital in the classes.

General conclusions:

Expert on sustainable energy

To convince both teachers and students, by calling their attention on energy issues is important to use a relevant methodology that include clear concepts to put forward the message of energy efficiency. Working with students is essential for the future. I mean, every action we can take at schools will be beneficial to the use of sustainable energy in the future.

There are, anyway, some activities that we like the students to follow, to make it so that they are not only trained but also involved directly in the activity. As another Didactical Approach, other than practical activities, we also employ videos, guided tours together with schools and institutes.

Towards the direction of raising awareness at school, many educational projects have been implemented (inside and besides the curriculum), related to the fields of energy & environment, energy & human society, energy & renewable sources, etc. Some of the best practices for sensitizing teachers and students on the vital issue of Sustainable energy involves training sessions of teachers on related subjects, energy saving practices at schools, lectures by specialists at schools and excursions to solar and wind parks.

The expert states that as the resources of unearth fuel are limited, besides firing it pollutes the environment, it is essential to discuss about the ways how to use the energy the sources of which are sustainable. Modeling the view of the young people now will have big influence later for decisions in future.

Teachers' opinion

There is substantial agreement on the **use of video in the classroom** as a dynamic resource for supporting curricula. Animation videos are especially important in teaching science subjects with very interesting and useful simulations that capture the students' attention.

Teachers believe that the image has to be clear and help to recall things. It can also be used to enlarge students' understanding. Therefore, the video format has to be simple, clear and very inspiring. In essence, it should allow students to memorize things.

- Teachers and students accept digital videos in the classrooms. More and more frequently they are in use in the schools.
- As a methodology, digital video, without any doubt, is a new technology in education to come.

As for sustainable energy, teachers think that this type of energy doesn't have any impact on the environment. In addition, it makes profit of natural resources. Therefore, it is important to inform and raise people's awareness about this type of energy, teaching a lesson to the whole society accordingly.



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In essence, sustainable energy is important for a clean energy future since it respects nature and allows the consumption of resources without polluting. When students make their own videos at school, the active teaching methods are used. The students are motivated. They integrate some subjects- e.g. geography, languages and IT. Efforts should be made to train teachers on other available software programs and how to create digital videos by themselves.

It is very convenient if there is internet in the class and it is possible to demonstrate films from YouTube, Google or Facebook. But not all teachers have enough skills or energy or motivation /stimulation to work with video.

Students' opinion

They prefer that the video is presented through a dynamic methodology, by which it is related to a particular Project or issue and is followed by group discussion.

Young participants like images that can illustrate a problem. They should be clear enough an appeal to most publics. They should also be familiar and show changes in order to call audience's attention. Most agree on having videos on social networks in order to see them there.

The use of blackboards and e-book is a new option that we need to use in the near future.

They define it as a clear energy that does not pollute the environment; it can be used in exhaustively and that's why it will reach the future. It will end up with the most serious problems that affect the planet.

Regarding the best strategies for raising awareness on the matter of sustainable energy, students proposed, among others, placement of recycling bins at their school yards, installation of photovoltaic systems on rooftops and circulation of proper informative material.

The subjects "environment, energy saving and sustainable energy are part of the German school curricula. The awareness of the complex of energy saving and sustainable energy exists, but the motivation to act is missing; the relevance to the own life is not mediated in the right way. The subjects should be treated in an interdisciplinary way e.g. calculation of energy saving in math lessons.

Most students (78%) know about the resources of Sustainable Energy In school the subjects that mostly deal with this topic are physics and geography. Even 80% of respondents understand the saving of energy as the saving of existing resources, but do not connect it with the Sustainable Energy Video creation and use in the lessons stimulate and teach students to save energy.

Recommendations

If we want to prepare active actions for teach and learn about sustainable energy at schools, we need to develop an scenario where teachers and students can learn using a clear methodology and the support of internal and external campaigns. It is important to create programs to train the teachers in energy efficiency at schools and also to involve the students in the creation of new resources at schools by using new technologies and social networks. Teachers should be trained in using of digital videos, social networks and sustainable energy information as a new methodology in education.

Teachers should be encouraged in using digital videos in disseminating and making public awareness about the sustainable energy issues.

If we want to have a big impact on the school community we need to create European campaign, networking on Active energy Efficiency and a new figure for the teacher, like an energy Manager at school.